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MODERN MANAGEMENT

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Management Men Look to The Future

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- Visual Aids for Industrial Engineers
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MANAGEMENT BOOKS OF THE YEAR

Special Issue

JANUARY 1951

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ADVANCED MANAGEMENT

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Advanced Management

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The 1951 Management Forecast

By GEORGE A. BRYANT
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President, Allen B. Du Mont Laboratories, Inc.
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President, Ford Motor Company
WALTER D. FULLER
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CHARLES SAWYER
Secretary of Commerce
ROBERT S. WATERS
President, National Radiator Company
LEROY A. WILSON
President, American Telephone and Telegraph Company
W. H. WINFIELD
Monsanto Chemical Company

Although the enigma of international affairs casts a foreboding shadow over all planning the feeling of solid confidence that shines through these forecasts provides a basis for inspiration and hope.

By LEROY A. WILSON
President, American Telephone and Telegraph Company

THE BELL SYSTEM is well prepared to do its full part in meeting the national emergency. That is the No. 1 telephone job in 1951. The System has spent five billion dollars since the war to expand and improve the country's telephone network. More than 35 million Bell telephones are in service—twice as many as in 1940. New and improved methods of communication are being more and more used.

The telephone is essential for military and defense production purposes and these will continue to get first attention. Construction work is moving right ahead on many special defense projects. Fast and plentiful telephone communications are equally vital to the expansion of production and the Bell Companies are determined to meet every such need. Additional facilities will also be required to provide service to people who are waiting. Restrictions on materials add severely to this problem but every effort will be continued to meet civilian needs to the full extent that national policy allows.

With a large continuing construction program and no let-up in demand for service, additional financing has been authorized by the stockholders so that the Bell System may be in a position to obtain new capital when it is needed. To attract and protect the savings of investors, earnings must be maintained at adequate levels. Accordingly, various Bell Companies have applied for further increases in telephone rates and other applications will be made. This must be done in order that the Companies may continue to succeed in providing the service the nation depends on during these critical times.

By IRVING S. OLDS
Chairman, United States Steel Corp.

THE AMERICAN STEEL industry will meet fully the production challenge presented to it as a consequence of the perilous international threat now facing this nation. The industry has the capacity, and the skill, and the will, to produce whatever tonnages of steel may be required for the defense and military needs of our country. In so doing, some ordinary civilian uses of steel may have to give way to the superior claims of the military, but everyone should concede that this is a necessary corollary of war, or near-war.

United States Steel in the year 1950 met its responsibility to users of steel by producing more steel than in any previous year in its history. That was true generally of the other members of the steel industry. In spite of these production records, steel supply has not been able to keep pace with current demand, particularly since the outbreak of war in Korea last June. This abnormal demand for steel has come into being as a direct result of the heavy loss of production during the six weeks' steel strike late in 1949, combined with other strike losses since the end of World War II, together totalling around 30,000,000 tons of steel, and of the flood of civilian orders for steel placed after the Communist invasion of South Korea on June 25, 1950, in anticipation of probable national defense requirements and likely steel priorities.

In meeting this current demand of unprecedented proportions, United States Steel has produced steel at a rate close to full rated capacity during the second half of 1950. While some customers of United States Steel may have failed to obtain all the steel that was desired, a policy has been followed of dividing up current production fairly among all customers, whether large or small. And no defense project has suffered through lack of steel.

The serious international situation has caused United States Steel to speed up and amplify plans for additional steel producing facilities.

By HENRY FORD II
President, Ford Motor Company

FORD MOTOR COMPANY and its 142,000 people produced two million Ford, Lincoln and Mercury passenger cars, trucks and tractors during the year 1950.

Payrolls totalled more than $590,000,000.

The company spent $1,750,000,000 for raw materials, finished products, construction and services.

It was one of the best years in Ford

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history, with production and sales breaking all company records of the past quarter-century.

Such figures now seem important only as they indicate the ability of Ford Motor Company to do its part in the job ahead of us all as we enter this decisive year of 1951.

We know that, however the present situation may develop, increased American production—above and beyond any peace or wartime levels the nation ever has reached before—must be achieved.

Only by such production can we maintain our peacetime progress and, at the same time, strengthen ourselves to protect and defend that peace.

Ford Motor Company is, I think, in a better position than ever before to take on—with dispatch, efficiency and good heart—whatever its full share may be of the task immediately ahead.

By MALCOLM P. McNAIR
Lincoln Filene Professor of Retailing, and Associates at Harvard University, Graduate School of Business Administration

WE BELIEVE THE STATED requirements* (Dec. 1, 1950) for the military program are too low. Pending a determination by the Joint Chiefs and the President for the purposes of this analysis we are assuming that the average number in the armed services during the calendar year 1951 will be 4 million and the average in 1952 and thereafter will be 6 million; and that the rate of cash spending for military purposes will be $36 billion in the calendar year 1951, $60 billion in 1952, and $84 billion in 1953.

In considering the strain on the economy of military expenditures of some such order of magnitude as $84 billion in 1953, we must recognize that, contrary to our experience at the beginning of both the First and Second World Wars, we are already operating in top gear on a practically full throttle.

Can we count on increasing output the way we did during the last war? Between 1940 and 1944 we increased our gross national product by the stupendous figure of $100 billion, moving from $97.1 billion to $197.6 billion. Involved in these data, of course, was a price rise of nearly one third, but even in physical terms production of goods increased by nearly 70%. It was this tremendous increase in output which enabled us to jump the war expenditures of the Federal Government from less than $3 billion in 1940 to nearly $84 billion in 1944, and at the same time to make possible consumer expenditures of $98.5 billion in 1944 against $65.7 billion in 1940 and savings of nearly $39 billion in 1944 against only about $7 billion in 1940. We must recognize more-over that this past experience was accomplished under the emotional and patriotic pressure of war conditions.

It is our judgment that, *provided everyone does his job,* the indicated goals for military outlays and troops under arms are *attainable* without serious damage to the civilian economy. This conclusion is based on the following analysis of current facts regarding manpower, productivity, and productive capacity.

	1951	1952	1953
Gross National Product	$300	$313	$337
Less: Government Purchases of Goods and Services:			
Federal Military	36	60	84
Federal Nonmilitary	11	11	11
State and Local Government	16	16	16
Equals: Total Goods and Services Available for Private Investment and Personal Consumption	237	226	226
Less: Gross Private Investment	40	40	40
Equals: Total Goods and Services Available for Personal Consumption (A)	197	186	186
Gross National Product	300	313	337
Less: Indirect Taxes, Capital Allowances, etc.	46	48	48
Equals: National Income	254	265	287
Less: Undistributed Corporate Profits and Corporate Taxes minus Net Interest and Net Transfer Payments	17	20	24
Equals: Personal Income	237	245	263
Less: Personal Taxes	23	25	28
Equals: Disposable Income	214	220	235
Less: Personal Savings	10	11	12
Equals: Indicated Consumption (B)	204	209	223
Indicated Consumption (B)	204	209	223
Less: Total Goods and Services Available for Personal Consumption (A)	197	186	186
Equals: General Magnitude of Inflationary Gap	7	23	37

TO MAKE POSSIBLE such a program as we have outlined, what are the burdens that will have to be borne by all of us, business, labor, government, and the general public, and how can those burdens be distributed most supportably? (See the *Harvard Business Review,* January 1951)

The capacity of the American economy to handle that job, even in terms of much greater magnitudes than anything the American people have yet been challenged by their leaders to prepare for, we have tried to set forth to the best of our ability. Now the earnest plea of all of us who sign this statement is that persons in positions of responsibility, from the President, the Cabinet, the Joint Chiefs of Staff, the NSRB, the NPA, and Congress on down, cast aside their political trepidations and partisan objectives, tell the American people plainly what the job is, and give them some real leadership. Undoubtedly it is part of the cold calculations of the Kremlin that a free economy will inevitably crack up under the strain of a long period of semi-mobilization. We have got to prove those calculations wrong, and with the right leadership we can do it.

Malcolm P. McNair
Edmund P. Learned
Stanley F. Teele
John Lintner
Edward C. Bursk

*Condensed from an article in the *Harvard Business Review,* January 1951.

By WALTER D. FULLER
Chairman of the Board,
The Curtis Publishing Company

IT IS PRETTY hard today to make any kind of forecast of business conditions for 1951. We have so many financial uncertainties and political uncertainties that it would be a reckless person indeed who did more than speak in generalities.

As far as business conditions are concerned, it seems to me that there are plenty of sound reasons why business should be good. On the other hand, if we become involved either in a world war or in a series of area wars, this condition might easily change suddenly and if taxation is as heavy as now seems probable, our business activities may provide fairly high employment, but there is going to be very little financial return left in the hands of either individuals or corporations. I shall not attempt to go into details in this connection because I am sure that everyone who reads *Advanced Management* is receiving dozens of documents along this line in every mail.

Management problems in 1951 will be quite similar to what they have been in the past. They will require an analytical approach and a solution based on sound synthesis. The problems will be different for each business and therefore each man must make his own studies in this connection.

It seems to me that the most hopeful situation with which we shall enter 1951 is the steady growth of the desire of thoughtful people to look at facts and then build their own futures on the basis of the situation as they find it. There will be less tendency to act upon old prejudices and much greater disposition to use actual thinking rather than preconceived notions in determining action.

By NEIL McELROY
President, Procter & Gamble Company

IT IS VIRTUALLY impossible to look ahead into 1951 and predict with any accuracy what business conditions are going to be. About the only certainty that we can foresee is that business managements are going to be faced with a set of serious problems growing out of the defense economy.

In my opinion, management will be looking for the answers to questions in four major areas:

1. **Labor supply—Will the labor supply be adequate and satisfactory?**
2. **Raw materials—Will adequate supplies of raw materials be available?**
3. **Expansion programs—Should industry continue expansion and improvement programs?**
4. **Can adequate profits be made under control conditions and high taxes to permit needed increases in production capacity?**

Some of these problems will be more disturbing in some industries than in others, but all management will have its ability and resourcefulness used to the limit to anticipate and plan for whatever may come. And management, during the coming year, will have to stand ready at all times to modify its plans on short notice.

By BRIG. GEN. DAVID SARNOFF
Chairman of the Board,
Radio Corporation of America

AT THIS time of national emergency, America is particularly fortunate in that since the end of World War II television has been developed to the extent that 40,000,000 Americans now comprise the television audience. This is of tremendous importance to the country since it provides a new medium to supplement radio's vast audience in achieving fullest unity of purpose.

When President Truman declared the existence of the national emergency, he was viewed by one of the largest audiences ever to see and hear a President of the United States at a single time. His audience surpassed in numbers the total population of the country in 1850.

The great effectiveness of television for service in training air raid wardens, for Red Cross work and direct appeals, for the spreading of visual information into the home, as well as the other classifications pertaining to defense, is a new and vital factor in the interest and welfare of this Nation.

As the year ends there are approximately 10,000,000 television sets in the United States and 107 television stations. 1950 brought to fruition years of television research, engineering and planning, with the result that the signpost on the road of progress is marked TELEVISION—in both black-and-white and color.

With more than 2,000 broadcasting stations serving 85,000,000 radio sets, radio continues as a powerful industrial and social force, possessing a nationwide and world-wide range that television has yet to achieve.

Because of the uncertainties of the international situation and the great importance of having America fully prepared for any emergency, the radio and television industry, like other industries, is faced in 1951 with restrictions on normal expansion.

The Radio Corporation of America has pledged to the President of the United States its fullest cooperation in the national effort to resist aggression and to help preserve world peace. RCA is "at the ready" with all its resources, facilities and manpower to do its part in helping the Nation to emerge from the crisis into a new era of peace and prosperity.

By L. M. CASSIDY
Vice President for Sales,
Johns-Manville Corporation

IN THE TYPE of armament economy that lies ahead of us, the construction industry must realize that adjustments and dislocations are in prospect for most classes of construction that are not either closely related to military mobilization or essential to civilian economy.

However, the construction industry is still headed for a big year in 1951. Factory expansion of the type associated with defense will boom. Housing in growing war production centers cannot be stopped and may even have to be accelerated. Road construction, far behind as a result of the last war, cannot be throttled down much, while school and hospital construction will continue at a high level.

Even in a "partial war" type of economy, the remodeling and repair market will be very strong and will continue to grow as more and more materials hitherto channeled into new home construction are made available for maintenance and repair of existing homes. It is very likely that the Government, for the duration of the present crisis, will consider the adequate maintenance of the country's housing plant of paramount importance, even though curbs have been placed on new home construction.

Even without war, the time was long overdue for credit curbs and stiffening of lending policies in the home building field.

By DR. ALLEN B. DU MONT
President, Allen B. Du Mont Laboratories, Inc.

THE BIG PROBLEM for television in 1951 is, of course, production. The full impact of the defense effort will not be felt until Spring or early Summer. But restrictions on basic materials and shortages of small parts used in receivers already have made it obvious that production figures will have to be cut drastically. There will also be a growing shortage of television technicians who will be concentrating on government work in electronics undertaken by television manufacturers.

Just how much this will effect production is anybody's guess. But it may be that 25% fewer sets will be made than in the 1950 September-October period when receivers came off the assembly lines at the rate of 9 million a year.

It is to be hoped that the shortages will not give rise to black market operations, thereby driving prices up further. In any event, the Du Mont company will adhere to its present policy of merchandise control to keep such possibilities to an absolute minimum.

Where color TV is concerned, the recent demonstration of a vastly improved all-electronic and compatible system of color, coming on the heels of statements that such a system wasn't feasible and an FCC decision in favor of mechanical color, has thrown the whole color situation into a state of complete confusion. It will take considerable time to settle this question. In any case, the abundant problems now facing the industry make it evident that the color question for 1951 will be mostly an academic one.

Naturally every manufacturer would like to make more sets in 1951. But the important thing right now is make sure our defenses are strong first. Recent events have made it clear that, if we don't increase our nation's strength, we very soon won't have a nation.

The electronics industry, of which television is a part, did a good job in the last war. You can be sure it will do a good job in this present emergency year of 1951.

By HENRY HAZLITT
Newsweek

AT THE MOMENT of writing it seems to me that the outlook for the coming year will be dominated by war and war preparation. This means that firms in a position to turn out war goods will get practically all the orders they can fill. This will be accompanied by a continued rise in prices, because the Administration seems likely to follow the inflationary policies that it has in the past, and to do it on a greater scale. This means a heavy budget deficit, continuation of Government bond-pegging practices by the Federal Reserve Banks, the further monetization of the public debt, and an increase in the total volume of money and bank credit through an increase also in private loans. The Government will undoubtedly soon try to offset this by the imposition of price controls. There will also probably be a pretense, though not the reality, of corresponding wage controls.

At the moment we face also the prospect of a heavy excess profits tax. Instead of overall credit controls, we face the prospect of a continuation of discriminatory credit controls — that is continued or further restrictions on installment selling and on the selling of particular items.

To sum up: 1950 seems likely to be a year of high volume of business, higher prices, high apparent profits before taxation, low real profits after taxation. It promises to be a year of sellers markets, a year of shortages, a year of full employment, full taxation, and more inflation.

FORECAST — 1903

The following excerpt from the letters of Henry Adams appears on page 402 of the second volume of Adams' published letters, edited by W. C. Ford. It is taken from a letter dated March 3, 1903.

"My statesmanship is still all in China, where the last struggle for power is to come. China is bound to go to pieces, and every year is a long step to the bad. The only country now on the spot is Russia, and if Russia organizes China as an economical power the little drama of history will end in the overthrow of our clumsy Western civilization. We never can compete with Asia. . . . In that event I allow until 1950 to run our race out."

By JOSEPH H. McCONNELL
President, National Broadcasting Co.

THE RADIO AND TELEVISION industry is expansion-minded. Regardless of world conditions, it will remain so.

The critical and constantly changing foreign situation make it impossible to comment on business prospects for the coming year with any degree of confidence. It is now apparent that one of the few certain characteristics of the coming year of 1951 will be a continuing state of change and uncertainty. Business men will have to be on their mettle to keep pace with changing conditions, protect the economic well-being of their companies and provide for their customers.

Broadcast services — whether for defense, education or entertainment purposes — will continue to improve and expand.

Management has long recognized the importance of presenting its ideas to the public. In the coming year, it will have greater opportunity to do so through improved radio and television service.

Advertising will again play a major role in gearing the country for full production for both civilian and non-civilian requirements. It is only through the combination of radio and television that the government and the advertiser can reach all the population economically, efficiently and emphatically. Based on the pattern of the previous war years indications are that advertising expenditures will reach new highs in 1951. Stepped-up advertising will be required to move America's huge civilian production against the cross-currents of tightened credit rules, increased taxes and other anti-inflationary devices which the government undoubtedly will adopt. As civilian production is curtailed in some lines, modern American business men will again revert to institutional advertising to keep their names and products alive in the highly competitive American market place.

For the radio and television industry and those who use it, public service will be more than ever a yardstick in 1951.

By GWILYM A. PRICE
President, Westinghouse Electric Corp.

INDUSTRY IS FACING a double-barreled problem in 1951 — to produce for defense and, at the same time, keep up a flow of essential civilian goods.

Limitations on basic materials such as copper, aluminum, steel, nickel and

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cobalt, will determine the extent to which it will be able to meet both of these responsibilities. This is especially true in the electrical manufacturing industry where all heavy industrial equipment as well as appliances, television and radio receivers require these strategic materials.

Accelerated military orders indicate steep cutbacks in the output of consumer durable goods.

At the end of 1950 more than 30 per cent of all the company's unfilled orders were for direct defense needs and more than one-third of all incoming business for 1951 is expected to be for military products.

According to Government figures, American industry has spent some 83 billion dollars for new and improved plants and equipment since the end of the last war. This country now has a production potential greater than all the rest of the world.

Illustrating this industrial growth is the fact that the demand for electricity — vital to all industry — rose to new heights in 1950. Utility companies are anticipating even greater demand in the future and have been pushing ahead their expansion and improvement programs. For example, in the first nine months of 1950, power producers ordered three times as much generating equipment from Westinghouse as in the entire year of 1949. In some cases, steam turbine orders were placed for delivery as far ahead as 1953.

Further reflecting this growth is the fact that most lines of industry set new production records during 1950, and consumption of goods by both industrial and home buyers outstripped any other year in the country's history.

Its record-breaking performance indicates that industry now has the manufacturing capacity, the management and employe skill and the technical know-how to help our country survive the present emergency and continue its progress in the future.

By W. H. WINFIELD
Manager, Economic Research Dept.
Monsanto Chemical Company

IN A WORLD full of uncertainties there appears to be at least one certain thing—the Communists' avowed pledge to destroy capitalism. This is the key to industrial developments during 1951. With both political and business leaders aware of this ominous threat, industrial expansion as well as industrial production will move at an accelerated rate regardless of peace talks or any temporary improvement in the war situation. Management's major problem, in addition to manpower and material shortages, will be the planning of expansion programs in such a manner as to preserve the balance which is so essential in a strong industrial organization.

KEYNOTE FOR 1951

By ERIC JOHNSTON
President, The Motion Picture Association of America

(The following statement was made by Mr. Johnston after a private meeting of a group of top-level management and labor leaders in New York City on January 3, 1951. Among those present were: Charles E. Wilson, Director of Defense Mobilization, who attended in a private capacity; Benjamin Fairless, President of the United States Steel Corporation; Alfred P. Sloan, Jr., Chairman of General Motors Corporation; Philip Murray, President of the CIO; John L. Lewis, President of the United Mine Workers; William Green, President of the AFL; Fowler McCormick, International Harvester Corporation; Lewis Brown, of the Johns-Manville Corporation and Al Hayes, President of the International Association of Machinists.)

"I hope this will be the first of a series of meetings at which these leaders of industry and labor can cooperate in the closest manner in this national emergency.

"I think we felt that our production genius was our greatest weapon. By this genius, and with the close cooperation of labor and management, we can produce the tools to defend our way of life. We are pitting the horsepower of the Western World against the manpower of the Communist World.

"The time is short in which to prevent the Communists from starting a third world war. I think every one felt there are many things we could not agree upon, but there are many things we do agree on.

"We all believe in the economic system under which we operate. There was a general tacit agreement first, that now we wanted to do all we could to cement that relationship; secondly, that we will give our advice and counsel to the Government on domestic and any other problems; and third, we want to evidence to the world that free men can bury their differences and work together to protect a free world."

By CHARLES SAWYER
Secretary of Commerce

PROPHECY HAS ALWAYS been a risky business, perhaps more risky now than ever before. We do know certain facts and from them can draw a few conclusions about problems which American management must help to solve. We know that adding defense production to an economy already going full blast means that demands for materials, machines, power, manpower, services and facilities will be greater in general than the readily available supplies. We know also that one item of which there will be a real surplus is money.

Although no one can forecast with certainty what will be the effect of the various government programs to combat inflation, the managers of American business and industry can do much to keep our economy strong and our dollar sound. Management can increase its efforts to conserve scarce materials. Management can work hard at reducing waste; it can redesign products in order to cut down, insofar as possible, requirements for scarce materials. Management can give increasing attention to using substitute materials.

Management must make the best possible use of manpower. Enlightened personnel practices are necessary, but, in themselves, are not enough to assure the willing cooperation of employees. Men and women work hard for an organization when they have confidence in it, and this confidence is based, in part, on respect for those in charge.

Above all, American management can help America expand its capacity to produce. The only realistic long-term solution to the problem of inflation is to balance the supply of money with supplies of goods. I realize that this is not easy. Expansion cannot be achieved overnight. It requires vision and re-

straint to use materials in the risky business of building for an uncertain future instead of processing and selling them in the lucrative markets of today.

Last September I met with managers of the steel industry and discussed with them this country's need for vastly increased supplies of steel. Nothing that has happened since I became Secretary of Commerce in the Spring of 1948 has gratified me more than the reactions of the leaders of the steel industry and their report to me a few weeks later. The new plans of the steel industry call for an expansion by the end of 1952 of nearly 10 million net ingot tons. This amount is 80 percent greater than the previous estimate of expansion for this same period. This decision to go through with a greatly enlarged program of expansion in the steel industry required vision and courage on the part of steel management.

Managers of the rest of American industry are matching this vision and are working hard to achieve it. With this kind of confidence and work we can increase our strength, check the formless fears of the weak and timid, and face the future with assurance.

By GEORGE A. BRYANT
President, The Austin Company

INDUSTRIAL BUILDING costs advanced 4 points to 179 (1926 equals 100) during the fourth quarter of 1950, according to The Austin Company's quarterly index which held steady at a post war low of 161 for the twelve months prior to the outbreak of hostilities in Korea. The year-end increase is primarily due to the advance in prices of steel and steel products and probably establishes a trend which will continue as overall wage rates are adjusted to conform with increases already granted in a number of basic industries.

The prospect is that a multi-billion dollar government facilities program will soon be superimposed on the record volume of industrial building already assured for 1951. This places a great responsibility upon the men charged with design and construction planning. The seven per cent reduction in building costs effected in 1949 in the face of rising wage rates and material prices has given some indication of the savings to be realized by care in planning and scheduling work.

Now that we are moving rapidly toward a dual economy, it is more important than ever that everyone concerned with building design and the production, distribution and use of building materials work together to conserve the gains to be made by standardization, simplification and the orderly scheduling of work.

The extent to which these principles are applied during the next few years will have a very important bearing on the ultimate cost of new facilities. If they are followed, substantial savings may be made on many jobs without any actual loss of time in bringing work to completion.

By ROBERT S. WATERS
President, National Radiator Co.

SALES OF CIVILIAN heating supplies may be reduced as much as 35 per cent in 1951, due to present credit restrictions on new home construction and further building limitation measures anticipated under the accelerated defense program. We expect to be allocating at least 30 to 40 percent of our production to military use.

These predictions are based on present planning. Full effect of the rearmament program on the building industry will, of course, depend on just how big the word "defense" becomes in 1951.

JAMES S. KNOWLSON
President and Chairman of the Board
Stewart-Warner Corporation

FEW PEOPLE SEEM to realize that conversion to defense production means retooling and that that takes time, at best.

Few people seem to realize that a plant without work is a dead weight and must be reactivated from the ground up —a much more costly and less efficient operation than orderly conversion.

American industry is presently operating in high gear. Its production rate should be maintained and can only be maintained so long as it has materials, markets and manpower.

Delays in placing military orders, controls, and unintelligent stockpiling may very possibly result in a hiatus of quite serious proportion.

To maintain industry operations at a high level during the conversion process is the basic problem for our planners, if we are to maintain the productive power which is ours and which offers our greatest opportunity for survival in this war torn world.

We may well reduce the time spent for incriminations as to who got us into this mess and how, pull in our belts and get down to business without hysteria and with the calm determination to lick the present situation as we have those that confronted us in the past.

By FRANK M. PORTER
President, American Petroleum Institute

IN PEACE OR WAR, the petroleum industry has a great responsibility to the armed forces and the American people. It has proved itself equal to the tasks of the past, and there is no doubt in my mind that, allowed to operate in a healthy, competitive atmosphere, it will continue to do so in 1951 and in the future.

Petroleum now supplies a large share of the nation's energy requirements. In the long run, the ability of the industry to find, produce, transport and refine petroleum will be one of the important factors which will determine whether this and other governments of free people will survive, or whether the totalitarian philosophy of communism will prevail.

Over the past five years, petroleum management has wisely reinvested more than 10 billion dollars on domestic facilities. It has poured more than 100 million dollars a year into constant research for new and better products. It has carried on a nationwide public relations and information program to make the public more conscious of the intricacies of business and the American system which makes it all possible. Specific results of this foresight and planning, since the peak war year of 1945 alone, are an increase of 27 per cent in crude oil production capacity; an increase of 26 per cent in refining capacity; an increase of 24 per cent in crude oil reserves; steady improvement in quantity and quality of petroleum products; and better public understanding and appreciation of the oil industry and what it does.

These are critical times, and no business or industry can rest on its oars or depend upon fading commendations to carry it through the ominous months ahead. The men and women of petroleum will accept the challenges of the new year as they have in the past — with courage, skill and constructive planning.

THE FOLLOWING BOOKS are arranged in the order of frequency of selection by members of the panel. Volumes in the top group were listed, as indicated, by more than one member of the panel.

No limit was placed on the number of volumes that could be listed. Therefore, while frequency of selection is an index of merit and wide readership, it is not meant to be a final criterion. Some panel members submitted one or two choices, others listed five or more books.

Each selection represents the choice of panel members based on personal knowledge of current books.

Management Books of the Year

A selection of the outstanding literature in the field of management principles, philosophies and techniques.

Reviews of selected books which appeared in 1950 issues of ADVANCED MANAGEMENT are shown by the following numbers keyed to titles shown below:

1. June
2. September
3. October
4. November
5. December
6. February
7. May
8. August
9. November

SELECTED BY FIVE MEMBERS OF THE PANEL

THE NEW SOCIETY. By Peter F. Drucker.[1]

THE SCIENTIFIC APPRAISAL OF MANAGEMENT. By Jackson Martindell.[2]

SELECTED BY FOUR MEMBERS OF THE PANEL

BONDS OF ORGANIZATION. By E. Wight Bakke.

THE GROWTH AND DEVELOPMENT OF EXECUTIVES. By Myles L. Mace.

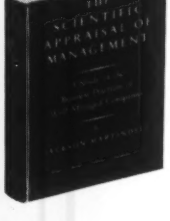
SELECTED BY TWO MEMBERS OF THE PANEL

PUBLIC ADMINISTRATION. By Simon, Smithburg and Thompson.[3]

DEVELOPING MEN FOR CONTROLLERSHIP. By Thornton F. Bradshaw.

PRODUCTION PLANNING AND CONTROL. By Thomas M. Landy.[4]

STREAMLINING BUSINESS PROCEDURES. By Richard H. Neuschel.



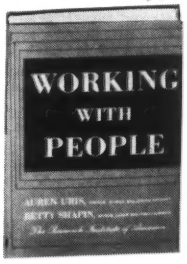
PUBLIC RELATIONS HANDBOOK. By Philip Lesly.

THE POWER OF PEOPLE. By Charles P. McCormick.

MANPOWER ECONOMICS AND LABOR PROBLEMS. By Dale Yoder.[9]

MANAGERIAL PLANNING AND CONTROL. By Billy E. Goetz.[6]

SELECTED BY ONE MEMBER OF THE PANEL



WORKING WITH PEOPLE. By Uris and Shapin.

ENGINEERING ECONOMIC ANALYSIS. By Clarence E. Bullinger.

SECURITY, LOYALTY AND SCIENCE. By Walter Gellhorn.

OUR MORE PERFECT UNION: FROM EIGHTEENTH-CENTURY PRINCIPLES TO TWENTIETH-CENTURY PRACTICE. By Arthur N. Holcombe.

GIANT BRAINS OR MACHINES THAT THINK. By Edmund C. Berkeley.

LIFE OF AN AMERICAN WORKMAN. By Walter P. Chrysler.

INDIVIDUAL INITIATIVE IN BUSINESS. Edited by George H. Allen.

MILITARY MANAGEMENT FOR NATIONAL DEFENSE. By John R. Beishline.

OFFICE METHODS, SYSTEMS, AND PROCEDURES. By Irvin A. Herrmann.

LAYOUT PLANNING TECHNIQUES. By J. R. Immer.[5]

INSPECTION ORGANIZATION METHODS. By James E. Thompson.

THE HUMAN USE OF HUMAN BEINGS. By Norbert Wiener.

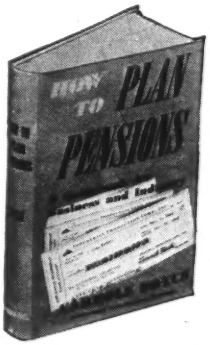
MAKING CAPITALISM WORK. By Dexter M. Keezer and Associates.

BUDGETARY CONTROL. By Rautenstrauch and Villers.

HUMAN RELATIONS IN INDUSTRY. By Burleigh B. Gardner and David G. Moore.

HIGHER CONTROL IN MANAGEMENT. By T. G. Rose.

THE DEVELOPMENT OF AMERICAN INDUSTRIES. By Glover and Cornel.



PROBLEMS IN PERSONNEL ADMINISTRATION. By Richard P. Calhoon.[8]

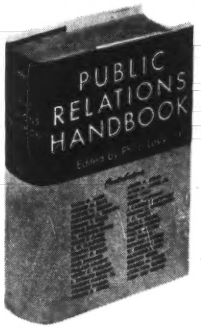
THE PSYCHOLOGIST IN INDUSTRY. By M. E. Steiner.

INTRODUCTION TO ECONOMICS. By Theodore Morgan.

APPRAISING FITNESS BY MEANS OF PSYCHOLOGICAL TESTS. By Donald E. Super.

STEELTOWN. By Charles R. Walker.

SMALL PLANT MANAGEMENT. Edited by Edward Hempel.



TEXTBOOK OF OFFICE MANAGEMENT. By Leffingwell and Robinson.

LARGE SCALE ORGANIZATION. By George E. Milward.

HOW TO PLAN PENSIONS. By Carroll Boyce.

PUBLIC RELATIONS IN THE LOCAL COMMUNITY. By Louis B. Lundborg.

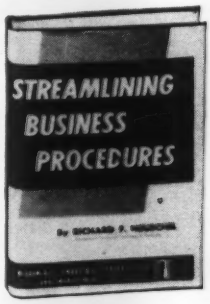
BOTTOM-UP MANAGEMENT. By William B. Given, Jr.

FROM THE WAGNER ACT TO TAFT-HARTLEY. By Millis and Brown.

THE MANAGEMENT OF PERSONNEL AND LABOR RELATIONS. By Watkins, Dodd, McNaughton and Prasow.

WAGE AND SALARY FUNDAMENTALS AND PROCEDURES. By Lionel B. Michael.

HOW TO TAKE A CASE BEFORE THE NATIONAL LABOR RELATIONS BOARD. By the Bureau of National Affairs.



THE HANDBOOK OF ADVANCED TIME-MOTION STUDY. By L. Arthur Sylvester.[7]

HUMAN RELATIONS IN MODERN BUSINESS. By a group of leaders in Business, Education and Religion.

CYCLES. By Dewey and Dakin.

ORGANIZATION OF INDUSTRY. By Alvin Brown.

MOTION-TIME MEASUREMENT. By Maynard, Stegemerten and Schwab.

NATIONAL SECURITY AND INDIVIDUAL FREEDOM: A RESEARCH STUDY OF THE COMMITTEE FOR ECONOMIC DEVELOPMENT. By Harold D. Lasswell.

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The Editorial Board of ADVANCED MANAGEMENT acknowledges with gratitude the work of the panel members listed below.

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What Did We Learn About Materials Controls?

By FERDINAND EBERSTADT

F. Eberstadt & Co., Inc.

Formerly Chairman, Army-Navy Munitions Board
and Vice Chairman of Program Determination, WPB

What lessons did we learn about controls from World War II? A leading authority on program determination and material allocation takes a look at today's problems against the perspective of yesterday's experience.

MY TOPIC RELATES to what we learned, and I am going to try to stick to that as closely as I can because one of the things that we learned in Washington was how annoying and how futile were dogmatic suggestions of those who were not familiar with the problems.

Priorities and control of materials seem to be fields where it is very much easier to find a solution if you are not hampered by facts. We received the benefit of a great many solutions some of which were more theoretical than practical. There were a few principles, let us say, that emerged from our experience and they are principles which I think, but want to say modestly, are applicable in this or any other situation.

One of the principles was the indivisibility of the priority power. I mean by that that the priority or allocations power is after all an implement or mechanism for working out a program. The first thing is the program. You must have a program that you are working toward. When once you have a program the priority and allocations powers are means or instruments for working out that program. They cannot be divided and assure accomplishment of your program.

Adapted from a paper presented at a meeting of the Trade and Industry Law Institute.

There are, generally speaking, five sinews of production. There is manpower. There are materials. There are power, facilities and transportation. There may be other minor elements, but in those five you have the main pillars of production.

Now, it must be obvious to you at once that if you are shooting toward a certain program all five sinews must be coordinated toward that program. Therefore, those of us who were down there before watch with interest, and will be concerned about, the matter of coordinating the priority power. Under the law and the regulation issued pursuant to it, the unification of the priority power does not seem entirely clear.

There are two circumstances, however, in which any program will work whether it is soundly coordinated or not. One of those circumstances is if all of those concerned with equal power, let us say, actually are able to pull together. Thus they unify the priority power in their several persons. If that is accomplished the blueprint makes comparatively little difference. Historical precedent is not entirely reassuring as to that possibility.

The other circumstance, of course, is if the program itself is not so vast as to put a strain on any or all of the five sinews of production. Then, of course, the program can go through without a strongly centralized control.

Another thing we learned was the difference between a priority system and an allocation system. Now, by definition the word priority is a relative term. It means that one thing goes ahead of another. Take the field of steel, for example. If there is enough steel to go around for all wants, it is a rather simple thing to apply a priority on the more urgent ones. I invite your attention to the fact that all of these questions are combination questions of amount and of time. There is no trick in getting 100 million tons of steel. There is a very considerable trick in getting 100 million tons of steel in six months. You must consider priority in terms of time and amount.

PRIORITIES vs ALLOCATIONS

But when you get into a situation where your demand is in excess of your supply within the time under contemplation there your priority system is placed under a very heavy strain which it may not be able to bear. In those circumstances your alternative is to resort to allocations.

An allocation is not a relative delivery of goods, it is an absolute delivery of goods. You will see at once, if you have a demand much larger than the supply, the priority system is bound to break down. You get into circumstances where money, which is the normal magnet for goods, will be decreasing in pulling power and price will rise and a general state of confusion result; whereas, if you have an allocation you will deal with your whole supply and you are artificially able to cut down demand.

And that takes me to the next point that we learned, and that is that demand and supply have a way of struggling into balance and that the control of war production involves not only control of supply but control of demand as well. You have got to balance demand and supply if you are going to have a smooth-running well balanced program.

CONTROLLING THE ESSENTIAL CORE

Now, you cannot set out and balance every item in the economy, not even every material item. You would be getting into a field so vast that if almost all the people in the country were employed on the paperwork you still couldn't accomplish it. We found, there-

fore, that it was essential and practical to grasp certain of the, let us say, cores of war production, and, controlling those cores, to let the other and less essential elements fall into line. And they did pretty well fall into line. The cores which were grasped were steel, copper and aluminum. If you built your war production program around steel, copper and aluminum you probably had a pretty effective control. I don't want to leave out of consideration the fact that here and there you would run into critical materials and critical items, that required special treatment, but if you controlled the demand and the supply of steel, and of copper, and of aluminum, you kept a structure which was simple enough to operate at the top and which brought the general pattern pretty well into line.

I think that we fairly well explored, and I believe to a considerable extent mastered, the techniques of materials distribution.

One thing that I observed when I went to Washington was the rather complete disregard for past experience. It was amazing to me to find how few people had read, much less studied, the basic works of Mr. Baruch which relate to the organization of war production and the more fundamental elements, of material control. The records of the First World War are fairly complete. Those of the Second World War are complete in great detail. Rare indeed is the man who did not feel the call to write up his experiences, and that has proven to be a very valuable thing.

I think that if I could make any suggestion to those down there now—those competent and unselfish men who are devoting their time to this job, it would be to urge upon them a study of the experience and the records of the last World War in the matter of material control.

I don't want to quote anybody, but I would just indicate to you the type of thing that comes up. I will read from an interview in a magazine—not to be named—given by individuals—not to be named—because I do not want to indulge in criticism. The type of thing that causes informed people confusion goes something like this. This question was directed at this particular individual: "But civilian consumption of what's left after defense will have to be divided or allocated or rationed. Will you do that, or will the industries themselves recommend?"

DISTRIBUTING THE RESIDUE

The answer was: "Our theory and practice are that we will seek the advice and counsel of industry in all of these matters." A laudable sentence. "Where allocation is required, of course, NPA will authorize the indicated action. In other words, we take steps to see that the military establishment gets what it needs, and we wouldn't undertake beyond that to say what industry should or shouldn't have."

That is a very difficult thing to do. If there is only so much supply and demand is the supply plus 50 per cent, it is very difficult to take the military part and then not indicate what civilian industry should or should not have. That became evident later in the interview with another man, and I will read you a statement that is rather difficult to reconcile with the one I have just read.

The question here being on distribution, the problem of how you would supply the civilian economy naturally came up. This was the question: "A distribution warehouse might sell to General Motors?" From which you will see at once that it would get back into war or civilian production. The answer: "Yes, but, again, we will attempt to set up policies and procedures which indicate that the warehouse is to continue its trade with its normal users. That may well present a difficult point of administration, but I suggest that when the impact of the defense program makes material scarce we do have a responsibility to see to it that the material available is distributed equitably."

That brings me to this point that once you get into a scarcity and once the military program takes a substantial portion of the available supply, which is less than the total demand, there seems to be little escape from the responsibility on the government of making an allocation clear across the board.

I come back again to the fact that whatever the system may be and whatever the order of priority may be, with plenty of good-will and with not too large a program, any system will operate. If, however, the men who have a way of getting very seriously interested in their own particular portion of a program—and it is right and proper that they should or they shouldn't have those jobs—if they begin to get into conflicts of jurisdiction and if the impact of the program is as great as presently prophesied, then I hope that some hours will be spent—a lot of hours will be spent—in studying the lessons which were learned, though not always applied, the last time around.

Any government program must meet three classes of requirements. It must meet the economic requirements, the administrative requirements and the political requirements, and I should say that the question of centralized controls goes right to the heart of that statement.

TIMING FOR CONTROLS

The time to centralize control over a security program is when economic conditions, the administrative situation and the political conditions will support it, because if you make the appointment in transgression to any considerable extent of any one of these three requirements you will embarrass the man whom you appoint and you might frustrate him.

Now, that is a general remark, and I will attempt to be a little more specific. Take the present situation from the point of view of administration. In my opinion, the situation is ripe for such an appointment. The National Security Act of '47, particularly with the amendments of '49, having in mind that we should be spared the variety of organizations that we passed through before we got to the World War II Production Board, set up in outline to be sure, a conventional and very adequate system of administration. So from the point of view of administration it seems to me that the time is now, and the administrator, if appointed in present circumstances, without great readjustment, would find adequate machinery at hand.

From the economic point of view I am inclined to think that we are either there or very close to it. The question is not simply the size of the military program in existence. It may also be the size of the military program in contemplation. At present we all know there are a great many of the alloy elements where supply is way behind demand, and it looks very much as if steel itself were in that situation. In these circumstances, it seems to me, it would be prudent from the economic point of view to set up the administrator that you are talking about.

Of course, it is possible that the mili-

tary program will be smaller than is presently contemplated. It is possible that the present pressures which the military program faces might dissipate its size. We do not know exactly what the future is. It would seem wise to take the more prudent course and put, for example, steel and copper and aluminum under a fairly firm allocation.

From the political point of view I don't feel competent to pass judgment. My impression is that our people, our manufacturers, our laborers, would welcome the step that you query about. Of course, that doesn't go into the problem as to how the job should be administered.

THE MANPOWER PROBLEM

In the last war I think we came pretty close to solution of materials distribution, but there were two equally important fields where I think we made more limited progress, one was the field of civilian supply which I will mention and lay aside; the other is in the field of manpower. There is no question of the vital importance of that matter, nor in my opinion is there any doubt about the risks which we are running in that field. It goes back, it seems to me, to an understanding of the philosophy of total war which is that every man serves where he is most needed and most useful. If you have a system by quotas where you draft ten per cent of the registrants, such a draft can take place without a ripple in New York City. What it does to Seattle or San Diego is quite a different problem. It seems to me to be high time that we get busy on that important problem, beginning at the beginning, with the philosophy of total war and lay sensible plans recognizing that manpower is perhaps our greatest weakness and most vulnerable point, laying plans which will provide for the efficient use of the manpower based on the philosophy of total war and bringing into play tremendous other sources, as for example, womanpower and the older people that have not been brought into play and we are not yet prepared to bring into play. In other words, if we go into this any further we had better get busy at once and lay plans for handling the question of manpower at least as adequately as we handled the question of materials the last time.

LUXURY OR NECESSITY?

I would like for once in my life to pay the penalty of too much too early. We have already paid often for too little too late. My feeling is that this time perhaps we should risk the consequences of too much too early.

Proceedings of The Annual Conference of S.A.M.

Hotel Statler, November 3-4, 1949

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STANDARDS—
Spearhead of Industrial Mobilization

By ROGER E. GAY
President, Bristol Brass Company

Technological progress and the benefits of simplification and interchangeability place new importance on the effective use of standards.

BECAUSE I AM a salesman, I perhaps look at the benefits of Standards in a different way than engineers. The appeal to me is the convenience to the ultimate consumer, and the added sales approach for the salesman. Thus, perhaps, this article will reflect some of those ideas though, specifically, my subject confines me to the discussion of *Standards as Spearheads of Industrial Mobilization*. Men and materiel are the spearheads in this man's war, but if it had not been for Standards, we wouldn't have the materiel mass produced by many facilities.

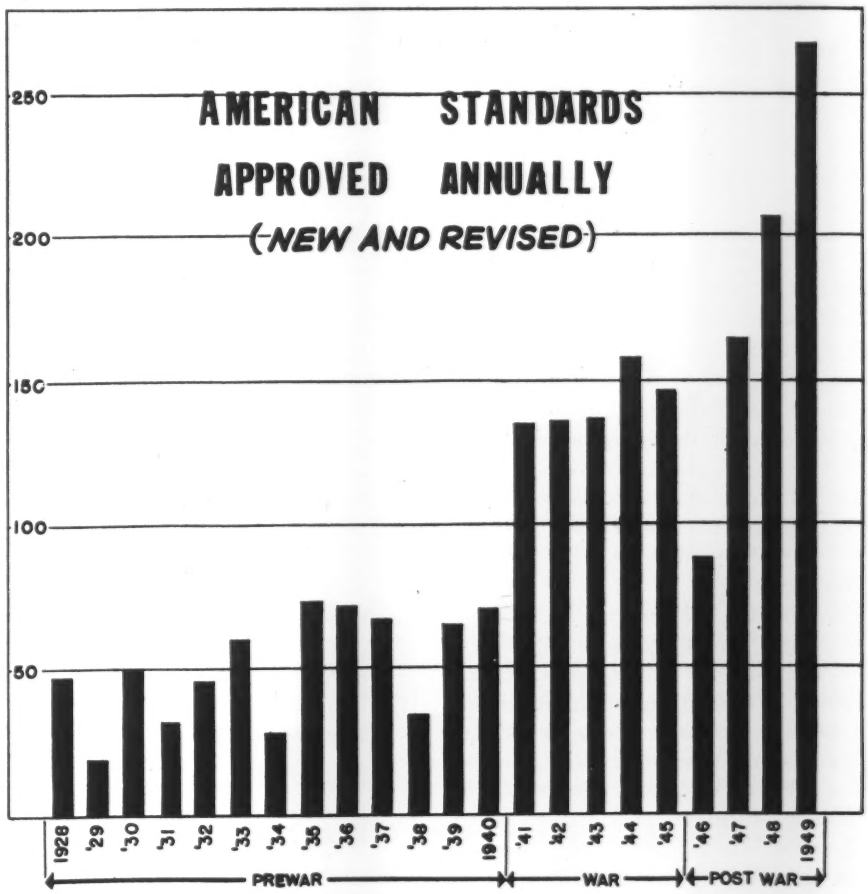
Without Standards, we would still be fighting our wars with spears. The ASA was a direct outgrowth of World War I, when the woeful lack of Standardization, even between the various branches of our own Armed Services, pointed up their need—too late, at that time, to be effective. There was planted the seed of Standardization. It may sound funny in this highly developed society in which we think we live, but it's still true. Battles and wars are won by those who "gets there fustest with the mostest," and it's equally true that industry cannot mass produce the material of war and get it to battle "fust" without the most complete Standardization of all the component parts that make up modern war equipment.

It would interest you to know that in the four war years, the ASA helped to develop about 500 Standards that contributed to America's economic mobilization and military rearmament. Of these Standards, 160 were specifically requested by government agencies, such as the Army, Navy, War Production Board and Office of Price Administration. Many of these wartime Standards were later converted to peacetime use, and served as a basis for integrating industrial requirements in the postwar years. But, as usual, we Americans had to do it the hard way — backwards. (Standards should be developed in an atmosphere of peace, and not during the stress of war.)

This point was well expressed by General Donald Armstrong, a director of ASA, in an address before the War College in March of 1949 when he said:

"The history of Standardization shows that, not only in 1917 and 1918 but in 1941 to 1945, there was a decided stimulation of the job of Standardization. The point that I would make in conclusion here today is this: How do we dare wait for a war to stimulate Standardization? How can we justify any indifference to Standardization in the world in which we live? How can any of us fail in any job that we have to emphasize the need for managerial and technical Standards established now which accomplish these ends that I have just named?

"We have a great number of task committees or advisory committees that serve both the Munitions Board and the National Security Resources Board. My feeling is that every military specification that concerns, say, the foundry industry will be handed over to the foundry advisory committee for study, and



Adapted from a paper presented at the Annual Meeting of the American Standards Association.

to comparable committees with all the other specifications.

"There are two types of education needed. First of all, we need to see that wherever the Army, Navy and Air Force specifications differ from commercial practice, industry is told why that is necessary. Such differences irritate industry. Frequently they don't see why you can't use standard commercial practice. You and I know that with the high temperatures of the tropics, the severe low temperatures of the Arctic regions, the humidity and other things like sand and dust that military equipment is subjected to, frequently a departure from commercial standards is needed. But let us make industry understand in time of peace why these military specifications are more severe than the commercial specifications.

"Let us, in the second place, assimilate the military specifications with the commercial specifications whenever that can be done. Very frequently it can be done. There are too many engineers, both in industry and in the Military Services, who want something special. It is human nature. They like to be the father of something that is different from anything else in the world. You will have to fight that attitude and that trend."

Thus far we've thought some about what our Association has done and has not done. If we had heeded the General's advice, we wouldn't be in the mess we're in today. What of the future? How do we get out of this mess?

SIMPLIFICATION FOR INTERCHANGEABILITY

Our great friend, Howard Coonley, has many times referred to the work of the American Standards Association as simplification. With that in mind, I tried to survey the problems ahead of us in industrial mobilization to ascertain just what must be done and how we may most efficiently and quickly accomplish the job now.

The country's industrial production is presently operating at an extremely high rate. You all will agree with that. Likewise, at the moment, a great portion of this high production rate is devoted to the manufacture of civilian goods—television sets, electric trains, skis, and thousands of different types of electrical appliances. We hesitate to cut back any more than necessary on this type of production. We hesitate further to disrupt our economy. Yet another fact—the economists tell us that we presently enjoy an almost irreducible minimum of unemployment. To restate the problem, then, we do not want to disrupt our economy by too radical changes in available goods, and our work force cannot be increased markedly at this time.

What of simplification? How can it help us to more production faster? More production faster is of little use to the war machine unless the new products being put into the field of battle are interchangeable with the parts already in use. Now let us further define simplification to interchangeability. Are there not products manufactured today which, with little change except increased quantity, could be used in war machinery? I am referring to nuts, bolts, bearings, ferrules, rivets and the millions of other parts common to civilian or military machinery.

You may say nuts, bolts, screws, and so forth are already standardized. That is correct, and here is where we come in. They are not being used to their full advantage. In this simplification process to expand production, we must preach even the gospel of procedure. May I expand that? Today we have a sort of decentralization. There is specialization in industry. An airplane engine manufacturer doesn't make bearings or valves in many cases. He subcontracts that job to experts in bearings and valves. If a competitive airplane engine manufacturer knew from which expert the first company was buying, frequently he could use that same part with only the minor change of increased production—no expensive tooling, no precious set-up time—simply make more of the same.

COORDINATING SUPPLY SOURCES

In this last war we all learned better to live with—to exchange ideas with our competitors. We must learn more. We must simplify by standardizing our buying procedures. We must simplify by standardizing wherever possible our sources of supply. These sources of supply must be educated by us. We have somehow survived the headaches of one manufacturer making a part to the high limit of tolerance—another supplier fabricating the mating part to the low limit. Result—both are right, but they don't fit; they won't work. In short, we must

THE THOUGHTS presented by Roger E. Gay in making the keynote speech at the National Standardization Conference are noteworthy for several reasons. First of all, in the current national emergency, recognized although not formally declared at the time of the Conference, Mr. Gay's keynote speech—entitled "Standards—Spearheads of Industrial Mobilization" — points out the importance of standards and the standardization process to industry as it faces the vital task of arming America and our allies. Too often standards and the standardization process are either taken for granted or completely ignored in spite of the fact that they are at work in most segments of American industry every working day.

Secondly, Mr. Gay's remarks are important because of their source. A relatively young top executive, as President of the Bristol Brass Corporation of Bristol, Connecticut, he has a keen realization of the importance of conveying to the business community and to the public at large the true meanings of the free enterprise system. To this end he has devoted much time to the affairs of the American Standards Association, where he is a member of both the Board of Directors and the Executive Committee. Mr. Gay's attitude is typical of many forward-looking business men occupying important positions in both large and small business who realize that the free enterprise system, of which voluntary standards are a vital arm, can survive only if it is supported energetically and that neglect of such support is an invitation to greater and greater control by bigger and bigger Government.

G. F. HUSSEY, JR.
Vice Admiral, USN (Ret)
Managing Director,
American Standards Association

let our left hand know what our right hand is doing.

SHARING IDEAS

We must exchange and share our ideas. No one of us has a monopoly on brains. There must be more Town Meetings, discussion forums, meetings of the mind.

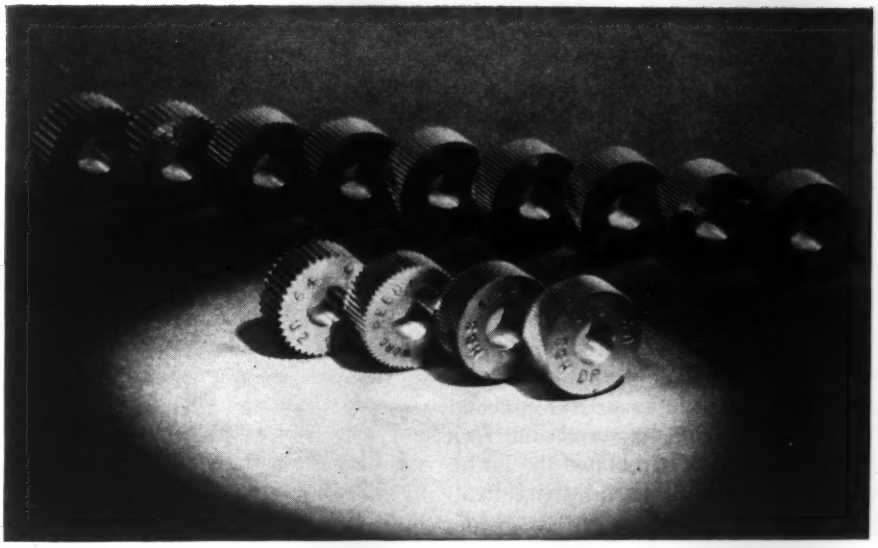
May I try to give you an actual example of this simplification for greater production — and, incidentally greater profits. One of my associates owns a Pontiac. He had an accident involving the door on the car. In the course of trying to have his door replaced, he found that exactly the same door is used on the Chevrolet and the small Oldsmobile. Though the three cars involved are all made by General Motors, you all know how fiercely competitive each company is against the other — even more competitive than some unrelated competitors. Yet they simplified their procedures; took advantage of interchangeability; let each other know what was happening. Result — three totally different automobiles, with a maximum of simplification, standardization and interchangeability in manufacture which produced three "mores"—more quantity, more economy, more profit.

A TOP MANAGEMENT RESPONSIBILITY

It's our responsibility to seek the greatest possible Standardization in the products we buy and the products we sell. It is top management's job to follow closely the work being done by the technical groups that represent your industries. The detail you can delegate to members of your organizations, but having delegated it, don't forget it.

It would make your hair curl if you knew what the dilatory tactics of your technical men were doing to delay the establishment of Standards in your industries. Now, that is not a blanket indictment of all the able men who are devoting their time conscientiously to the job. It is the few who stand out so notably at which we point. I do stress again that it is top management's responsibility to see that the job is done, done correctly and done quickly.

This leads me to another point. Emergencies tend to restrict the system of free enterprise that we business men like to think we are preserving. However, it is a fact that out of each period of emergency we emerge more controlled than controlling, and that's not our American way. It is essential that men in top management take active leadership in assuring the orderly development of acceptable national Standards as the only basis for rapid industrial mobilization.



Requirements for nine different special parts were reduced to four "standardized" units.

I think it might be well to repeat here the eight fundamental points on Standardization—the eight points to progress:

1. Standards should be voluntary. Industries, like people, are most willing to abide by regulations which they set up themselves.
2. The citizens of the country, who are producers, consumers and distributors—and often all three in one person—are the best regulators of their own interests.
3. Standards must be built into the very structure of the business organization to operate properly.
4. Standards must remain flexible. They must not become limitations or controls. They must not become restrictive procedures which industry must follow by mandate.
5. Voluntary Standards arrived at by private industry largely obviate the necessity for federal regulation.
6. Power that is unused is soon lost by the possessor. If American business fails to use the power it now has to develop and approve Standards, the work of Standardization will be taken over by the government.
7. Standardization is a function that costs money and must be paid for. Such costs are simply one expense of doing business.
8. The ultimate benefit of voluntary Standards to any one company depends upon the cooperative efforts of all parts of business and industry. The effectiveness of the services of the American Standards Association will, therefore, expand or diminish according to the willingness of American business to support the national standards body both with effort and funds. If you approve these fundamental points, then you are in agreement with the work, the aims and the operations of the ASA.

We have learned from the lessons of the last two world conflicts how essential it is that industry does not lose control of the Standards movement in times of emergency. Should Standardization become a government prerogative and function in times of emergency, I believe you will agree that such a move would give federal agencies unlimited powers of control over industry. *We* are the ones to take *active* leadership in Standardization activities today—now. I cannot fail to urge and impress upon you the immediacy of our need for your untiring efforts.

How Flexible Shall We Make Our Plant and Facilities?

By ROBERT P. NEUSCHEL

Management Consultant in Manufacturing,
McKinsey & Company

Today's unsettled conditions and rapid technological progress make plant and facilities planning a market research as well as a manufacturing problem. And Management often overlooks the marketing side of the story.

ACHIEVING THE right balance between specialization and flexibility is one of the most perplexing problems management faces in facilities planning—i.e., in the planning of new plant construction or changes in process layout. Should it build a specialized plant around the process flow? Should it build a multipurpose plant? Or should it build a plant that strikes a happy medium between the two?

Today, the incidence and importance of the facilities planning problem have increased because of two developments: Marshall Plan spending and our own defense needs have stimulated the building and conversion of industrial facilities. To encourage voluntary expansion, the Government now gives the businessman a five-year period to write off facilities created for defense purposes. This development has caught many companies off guard. Since they had no immediate expansion plans of their own, they had not bothered to figure out how they would tackle the facilities planning problem when it did arise.

The second development, by no means so recent as the first, is the increasing tempo of technological progress. Constant changes in product make-up, new developments in processing equipment, and shifts in market demand all conspire to make it harder for the facilities planner to resolve his basic problem. Shall our plant be specialized? All purpose? Or a judicious blending of the two?

Many companies are at a serious competitive disadvantage today merely because their facilities are so highly specialized. To keep pace with technological progress, which has substantially improved competitive products, they find that they must spend unusually large sums of money for building and layout changes. More astute facilities planning in the past would have saved them much of that expense.

Admittedly there are some industries in which companies can operate successfully only with the use of highly specialized facilities. Petroleum refining and cement manufacturing are typical examples. There the possibility of designing truly flexible facilities is limited and is accepted as a characteristic of the industry.

The important thing to recognize is that the problem of facilities planning has no black and white solutions. The degree of flexibility that is ideal for one product situation may be totally ineffectual for another. Each problem must be individually studied to determine the effects of flexibility and specialization on the current and long-term profit position. The manufacturing and *marketing* aspects must be carefully weighed to arrive at a sound conclusion.

FACTORS FOR BALANCE

Recognizing that facilities planning must be based on a broad appraisal of the whole problem — ranging from the general economic outlook to a very detailed analysis of equipment data — nevertheless our attention here is directed to what steps a company may take to secure a better balance between flexibility and specialization.

1. DETERMINE THE BASIC COST-SELLING PRICE (GROSS MARGIN) RELATIONSHIP IN THE INDUSTRY. If the sale of a product depends on its price, which leaves a very small profit margin, it may be imperative to plan highly specialized facilities so that manufacturing costs can be kept to the absolute minimum. Here the need for the lowest possible current operating costs may be so vital that designing flexible facilities is out of the question.

Often, however, the spread between manufacturing costs and selling price will permit some loss of current efficiency in expectation of greater long-term gains from flexibility. If the higher manufacturing costs do not seriously affect the current competitive position of the company, long-term profits may be greatly enhanced by designing highly flexible facilities.

But, before any decision is reached, the facilities planner should look into the effects of flexibility and specialization on capital costs and unit operating costs. ELEMENTS OF FLEXIBILITY CAN OFTEN BE INCORPORATED INTO FACILITIES WHICH HAVE LITTLE OR NO EFFECT ON EITHER OPERATING OR CAPITAL COSTS. Many companies have been well rewarded by searching for this "free" flexibility. A chemical company, for example, recently planned to build several large drying ovens. As was customary in the industry, the ovens were initially designed as an integral part of the building. This, of course, would have committed a substantial portion of the plant floor area to just one use. The company then found that it could use movable ovens for the same operations with no increase in operating costs or any other disadvantage. The ovens were simply placed on the floor. With those units, the plant achieved flexibility in the use of floor space at no extra capital cost.

2. ASSESS THE FUTURE CHARACTERISTICS OF THE PRESENT PRODUCT AND ITS PROCESS. Only when management executives consciously try to visualize the future of THE PRODUCT and THE PROCESSING EQUIPMENT, and the effect of those two on PLANT BUILDING OR EQUIPMENT LAYOUT, can they hope to foresee and offset the effects of product obsolescence on plant facilities. Listed below are some of the questions they should consider in planning new facilities. Although they can seldom find complete answers, they can at least get partial answers that will help them avoid costly and time-consuming errors in facilities planning.

(a) How often have the raw materials, make-up, etc., of the product changed?
(b) What were the nature and extent of those changes?
(c) What effect have they had on equipment layout and building structure? On unit cost to manufacture?
(d) Have past changes kept the product competitive?
(e) What has been the pattern of product changes in the industry? How frequent? How severe?
(f) What share of the total market has the product enjoyed during the past years?
(g) Are the manufacturing costs of the product currently competitive?
(h) What is the current status of product research? What developments are likely to be completed within the next few years?
(i) How does the scope and intensity of product research compare with that being done by competitors?
(j) How does the present position of the product in the present market compare with its historical position?
(k) Is the industry currently increasing or declining in importance?
(l) Why do people buy the product? What is the probable strength of that desire? How effectively does the product satisfy it?
(m) What strong and "comer" substitute products are appearing in other related industries?

Today, many companies are making important facilities planning decisions without adequately considering what might happen to the product or its process in the future. In one recent instance, a medium-sized consumer goods manufacturer decided to spend a considerable sum of money to enlarge plant floor space and facilities so that production volume could be substantially increased. He took that step even though the company's product research group had successfully tested a new process method in the laboratory. If the method were equally successful in passing actual production floor tests the desired production increase could be attained with existing floor space. Even though it would have taken several months for the production tests to prove out the economics of the new process, the possibility of its success should have deterred expansion plans. There was too much risk that the floor area added at a substantial cost would have been made idle in the very near future.

3. APPRAISE THE POSSIBILITIES OF COMPLETE PRODUCT OBSOLESCENCE. Whether to provide flexibility in plant and layout design depends not only on the likelihood of changes in the present product but also on the possibility of complete obsolescence. In this connection, management executives should ask themselves two basic questions:

(a) Is the product apt to become obsolete before the plant investment has been written off?
(b) What product might be made as a replacement?

Analysis of the product's history and its current market position (as outlined in the preceding section) should enable management to answer the first question.

As to the second question, it is obviously difficult to foresee future substitute products. If, however, a company has an extensive research and development program that is closely coordinated with manufacturing and sales, it may be possible to predict the product with some assurance.

Almost as important as trying to make the actual prediction, however, is constant awareness that changing technology and changing markets may some day force the company to make a new and different product. One of the major manufacturers of fine chemicals and pharmaceuticals has reflected such awareness in his basic approach to plant construction. In an industry that is plagued with constant changes in products and processes, this company has minimized the possibilities of plant obsolescence by designing only standard, multipurpose buildings whenever construction is needed for new products. No matter how specialized the product is, the company plans a standard type multipurpose building which appears to be two stories in height but actually does not have the second floor completed. This permits the use of unusually tall processing equipment which is common in this industry. Cantilevered mezzanines are generally built in to make better use of part of the head room. By such building planning this company has been able to adjust its operations when technological progress has forced a change in its products or processes.

4. APPRAISE THE DIFFICULTY OF PLANT DISPOSAL. Another point to consider is whether the plant buildings can be easily disposed of should the necessity arise. How much weight to give to this consideration will depend, of course, on individual circumstances. Even discounting complete business failure, a company will find it advantageous to have a readily salable plant for any one of the following reasons:

(a) Should the company outgrow present plant facilities, the best course of action may be to construct a new plant.
(b) Should the company have to use new raw materials, it may be desirable to relocate a plant nearer the source of supply.
(c) Should there be a major shift in market geographically, the company may find it advisable to move the plant closer to the market.

Many other reasons might be added, but one point stands out: management executives will want to be sure that a real need for changing factory location in the future will not go unsatisfied merely because existing plant facilities cannot be sold without great sacrifice.

One medium-sized manufacturer of consumer goods operates at a loss today because he has too many overspecialized, single-purpose buildings that cannot be sold for even a fraction of their original cost. This current operating loss could be readily changed to a profit if the Company relocated and

consolidated present facilities into one plant. But inability to dispose of present plants has made this management reluctant to relocate.

5. RECHECK POINTS OF VIEW THAT AFFECT FACILITIES PLANNING. Certain prevailing attitudes and concepts about process flow and technological progress make it difficult to achieve an effective balance between plant specialization and flexibility. One of these points of view—namely, that low current operating costs are the primary objective—has led some building planners to overemphasize the benefits of molding the plant around the present process flow. Another misconception is that technological progress is a revolutionary change.

Because of the first point of view, many engineers and industrial executives start plant designing by determining the one best process flow for the operation. The building is then constructed around this predetermined flow.

This concept, of course, is essential to low operating costs, but it is only part of the facilities planning problem. Because it stresses the details of process flow, it naturally stresses also the characteristics and the processing methods of the product as it is today. This absorption in the present product and its process may and sometimes does preclude consideration of the product's future. As a result the solution does not incorporate the elements of flexibility, i.e., the multipurpose facilities, needed to stay abreast of future technological progress.

TECHNOLOGICAL EVOLUTION

Many people erroneously consider technological progress as something gigantic or revolutionary in its impact —something that affects our whole economy. This point of view fails to recognize that technological progress is, in most instances, the accumulation of rather insignificant, day-by-day changes. To handle successfully the plant and equipment layout problems that follow in the wake of technological progress, it is necessary to realize that these slight changes are taking place constantly in one phase or another of the product. Because they are usually so small and frequent, many companies fail to plan for them. The results of that oversight are often, unfortunately, not recognized until an accumulation of small changes brings about a crisis in company affairs. This is nowhere more clearly apparent than in the failure of many companies to provide flexibility in plant design which will permit technological changes to be made at minimum cost.

To summarize briefly, management executives should make sure that their facilities planning incorporates the flexibility necessary to cope with the problems of technological progress. To do so, they should realistically answer the following questions:

1. *Do product manufacturing cost requirements demand facilities specialization, or will they permit designing to ensure flexibility?*
2. *What characteristics of flexibility can be included in facilities without adversely affecting current operating costs?*
3. *Has planning made due allowance for changes in the future characteristics of the products and processes?*
4. *Have we considered and evaluated the possibilities of the products becoming completely obsolete in the foreseeable future?*
5. *What new products might be made in the future to replace present products?*
6. *How much premium, if any, should be placed on ability to dispose of the plant at some unknown time in the future?*
7. *Are we overemphasizing the importance of "tailor-making" the plant to the process flow because of the lure of low current operating costs?*
8. *Do we recognize clearly that technological progress is not something revolutionary or far away but the accumulation of small changes in product and process which take place each day? Do our plans look ahead to place us in a position to keep pace with such changes at minimum cost?*

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Personnel Administration in Public Service

Analyzing characteristic obstacles to effective use of modern policies

By PHILLIP MONYPENNY
University of Illinois

A candid appraisal of some obstacles to more effective personnel administration practices in the public services.

CONSIDERING THE GREAT changes which have come about in the spirit and fundamental assumptions of personnel administration in many private concerns, it is of interest to speculate on the degree to which government as an employer has moved in the same direction. It is a question of more than usual interest since the scope of governmental employment is steadily widening so that more and more people spend their working lives under conditions set by some governmental employer. To be strictly accurate of course any comment on governmental personnel policy would have to take account the great differences between the personnel management of the different levels and units of government, between that of a levee district and that of the national government. The larger governmental units, however, have generally adopted formalized personnel systems that are similar in their outlines. The conditions of administration in all agencies that employ more than a few dozen people have striking points of similarity. It is to those points of similarity that this article is directed.

Government is sometimes exhorted to play the role of a model employer and considering the ethical values that government in general is supposed to realize there is every reason that it should. Considering also that effective personnel administration has notably increased output and decreased costs in private industry there is every material incentive to adopt policies that will give us the maximum value for the twenty-five percent or so of the national income that goes to support government of all types. Unfortunately the conditions under which governmental personnel policies are set do not always lead to ideal results. The reader of Sterling Spero's *Government as an Employer* must come to the conclusion that government over the last half century does not have a more creditable record than the average private employer and like private employers has provided more advantageous conditions only when pressed by the market or by the organized efforts of employees. Just as the adoption of more enlightened personnel policies based on a long-run advantage faced certain obstacles in industry government presents its own obstacles to a progressive policy. It is to an examination of these that this article is addressed.

COOPERATION VS. COERCION

It seems to the writer that the fundamental basis of contemporary personnel policy is a recognition of the complexity of human motivation and an attempt to enlist as many aspects of human nature as possible in getting the maximum contribution from the working force toward the purpose of the enterprise. It is further marked by an attempt to utilize the constructive forces of the individual rather than to frighten him into compliance. Finally it gives him a larger or smaller share in the determination of the conditions under which he works and attempts to share with him the feeling of satisfaction at the success of the collective effort. Against this policy of enlisting the full energies of individuals the general personnel policies of government seem inadequate indeed. Public personnel policy is apt to be characterized by mechanical procedures, the exposure of the working force to bitter public criticism, and by administrative attitudes which emphasize control at the expense of construction. When it is realized that the criticism of employees comes from the public and the legislature, the stockholders and board of directors so to speak, who determine the fundamental conditions of employment, it can be seen how hard is the job of management.

It may seem a paradox that the conscientious efforts at improved personnel administration represented by the civil service or merit system may constitute an obstacle to good personnel management. The major faults of the system in operation seem to the writer to be the tendency to regard individuals primarily as objects of skilled manipulation and a consequent tendency to rely on mechanical procedures performed by a staff agency to solve rather complex problems. As far as possible the personnel systems generally in force seek to make selection, to some extent promotion, compensation and other personnel operations dependent on the result of objective procedures uninfluenced, except in the final stages, by administrative discretion. The literature of public personnel administration, the time and energy of most personnel specialists, the largest part of the expenditure for personnel operations in government, are devoted to the doing of tangible, apparently simple and measurable things *to* people, measuring their vocational capacities, hiring them, classifying their jobs on the basis of duties and responsibilities, evaluating their performance and separating them, which is a euphemistic term for firing them.

The attitudes and emotions that accompany these phases of the personnel process are discounted or left to casual adjustment. Neither in the theoretical presentations of public personnel procedure nor in the practice of it is much effort put into doing things *with* people so as to enable them to achieve a better

adjustment between their own ambitions and desires, their work, and the institution in which they work. It is rarely recognized as important to the adjustment of attitudes that there be some participation by the affected individual or group in determining method or policy so that personnel operations become a cooperative effort, not something done by a paternalistic high command. The results to be realized in personnel procedures may be rather complex, such as the building of work teams that are teams and not collections of individuals, the evaluation of performance, the prevention of the abuse of sick leave and the like. Yet the basic procedures are mechanical.

The influence on individuals of the prevalent codes of the social groups of which they are members is underestimated and in general the effect on the work of individual and groups of nonrational factors is often ignored. The very purpose of existing selection and compensation procedure is to limit the discretion of executives so as to prevent abuses and properly so. But by and large the adjustment of unfavorable attitudes, their replacement by constructive attitudes, is willy-nilly the responsibility of line management. It is a responsibility that managers are encouraged to ignore by the assumption that personnel policy is the concern of the personnel staff and that their own role is to stay within the limits of the system. There may be the further assumption by line as well as staff that the human members of an organization are so many interchangeable units of measured skills and aptitudes whose application to the work at hand is largely an engineering problem.

Two examples will suffice. The ability of any organization to absorb a large number of new members in a short time is limited. The building up of a work group whose members know each others habits and attitudes so that individual work contributions are dovetailed without effort takes time. Yet not uncommonly rather rigid rules of selection and reexamination may be applied to the employees of an existing agency after a period when temporary appointments of workers has been the rule without much appreciation of the period of disorganization which is bound to ensue. Apart from competitive examination, the great contribution of systematic public personnel procedure is position classification which is of course a procedure for grouping jobs for examination, promotion and pay purposes on the basis of duties and responsibilities. It has an enormous significance to individuals and groups in terms of prestige and status as well as of future compensation and promotion. It is a process of classifying positions, not persons, as employees are carefully told each time that a new survey is made. The emotional responses to the process are tangential to the purpose of the classifier. Yet the result on the organization in terms of fear, hostility and upset working relationships until the changes are absorbed is as real a fact and as much a problem of personnel policy as that three typists are doing identical work at three different levels of pay and status.

AVOIDING THE "SPOILS SYSTEM"

The emphasis on system and routine in public administration, its concern with uniform procedures and with the restriction of discretion is easy to understand in the light of its development. The great problem of the public service traditionally has been to prevent the use of government jobs as rewards for party service and to eliminate favoritism of all kinds in appointments. That the fight has not been won even the most cursory view of governmental employment practices will show. But we have gone far enough in the fifty odd years since the Pendleton Act to ask whether civil service reform should not ask larger goals of public personnel policy than the elimination of partisan abuse of public employment. We cannot do without a framework of rigid procedure and the benefit of public criticism of every apparent abuse of discretion. Without them it would be impossible in most jurisdictions to maintain any constructive personnel policy whatever. The argument here is for a larger vision and a recognition of goals of personnel policy that are to be realized through the active management and that are directed toward securing a maximum contribution from the existing working force. This is the point of an excellent dissent by James K. Pollock to the Hoover Commission's report.

As we have said above attitudes on the part of administrators, legislature and the public are obstacles to this larger aim, quite apart from the limited objectives of traditional policy. A constructive personnel policy requires mutual confidence between employees and management, an appreciation of their mutual interest. Some public and administrative attitudes are based on the very reverse of confidence. Administrators and the public alike are apt to stress the high responsibility of the elected official and his principal appointive subordinates without recognizing that that responsibility can be realized only through a very considerable reliance on the honesty and competence of the rank and file. The administrator himself may tend to see the working force in the light of mechanical assumptions about manpower and output, manhours and costs, ignoring the various problems of morale that those conceptions conceal. Pressed by public critics he hesitates to relax controls in the interest of increased participation by those at lower ranks or to share information or decision with anyone except his personally selected subordinates. This situation is worse in these times of great division on public policy because administrative success may mean only increased criticism from those who are opposed to the basic policy which is implemented. It is not cause for surprise if the administrator often plays his cards close to his chest, rebuffs advice and criticism from subordinates on the ground that only those in the inner circle can understand the fundamental factors which must influence decision and that he prefers inaction to the possibility of error.

On the legislative attitudes toward the public service we need make no extended comment. Traditionally the legislature is slow to respond to the salary and other material needs of public employees and jealous of its prerogatives in the general control of administration so that it tends to keep administrators in leading strings except in times of great crisis. The fear of the legislative opposition that the administration in power is using the great machinery of administration for partisan purposes is perennial and intense and currently it is finding extreme expression in the Communist bogy. This is an additional burden that the administrator must carry. Its possible effect on his attitudes toward his own subordinates we have already seen. Taking these things together we have a formal policy of limited objectives and mechanical bent, a fear

of error and criticism on the part of administrators, and a legislative distrust of the administrator which has currently reached a high peak. All of these factors tend to stress the administrative necessity for controls both in the personnel program and as restrictions upon the initiative of members of the organization. They are opposed to the ultimate purpose of the release of human energy to which personnel policies should aspire. This is the ground in which personnel policy must grow, not always as inhospitable and infertile as suggested here, but by no means offering ideal conditions often as the postulate is put forward that government should be a model employer.

It is not necessary to point out to the readers of this journal how much at variance the tendencies sketched here are with the general requirements of an adequate personnel policy. The positive achievement of public personnel administration is largely in the field of selection, particularly in opening the service to qualified people on more or less equal terms, in the field of salary standardization, and to a less extent, in that of training. By and large personnel policy is thought to have made all reasonable provision for getting constructive effort from the staff if the wage structure is equitable, if there is a leave and retirement policy, and if there is an absence of obvious discrimination. Even in doing this much the problem of communication of the policy adopted to the staff is often ignored or ineptly handled. In all organizations there is an extraordinary ignorance of job and performance standards, working conditions, promotional opportunities and the like in parallel sections of the organizations. To overcome this difficulty, to make individuals and groups aware of the fundamental policy and of the various complexities which determine it, is a real task of personnel policy. Yet all too often the personnel specialists are content to do justice as they see it without making sure that those to whom it is applied understand that it is justice, or at any rate, the only justice possible under the circumstances.

SUPERVISORY PARADOXES

To sum up some of the principal failings of personnel policy as it affects the existing working force, there is an unawareness of the need for consultation, or a positive unwillingness, based on considerations sketched above, to consult. There is a minimum of effort to enable the individual worker to see himself in relation to the whole enterprise, to help him to understand the purpose of the enterprise and his contribution to it. There is a minimum of preparation for new decisions, for changes or organization, for changes of work assignments, because the advance disclosure of information seems only to permit the crystallization of opposition. Decisions are carefully guarded in higher headquarters and administrators and supervisors at lower levels are stultified by their inability to share with their subordinates information that columnists may be spreading broadcast. In consequence the position of the supervisor is insecure and he is far from being able to realize the ideal of leadership of the work group rather than dominance of it by fear. Employee organizations are resented or tolerated rather than welcomed as useful allies of the management in promoting a mutual understanding and in providing an additional channel for information. The need of continuously channelling information on basic policy up and down the line is ignored.

It is needless to repeat that personnel policy in the broad sense is closely related to supervision and that in an even larger sense personnel policy and management are almost identical terms. The relationships of individuals are not only impersonally to the organization or to the service as an abstraction; they are also very concretely to the persons in authority with whom they immediately deal. The mode in which authority is exercised is as much an embodiment of personnel policy as is the wage structure. Unfortunately the authoritarian tradition is as strong in government as it is in industry. It can be changed only by the line management. The personnel agency may influence the mode of the exercise of power but it cannot control it. Yet in government there is only a slow recognition that personnel policy cannot be the work of a single unit of the organization acting alone and that if personnel policy is regarded as being summed up in the work of a central agency it has enormous inadequacies. There is perhaps a slower recognition that if personnel policy is thought to be concerned with personnel operations in a narrow sense it has great omissions.

Despite the legal tradition to the contrary, cooperation is obviously the basis of any organization, governmental or private. It may be asked, but it cannot be commanded. Sacrosanct as questions of high policy may be the rank and file must be relied on to carry them through to completion once adopted. Personnel policy by definition covers those matters which affect employees most acutely, materially and socially. It is the place in which cooperative development will be most effective in creating cooperative attitudes. The method of cooperative action which permits employees to have a measure of participation in the shaping of decisions which affect not the purpose of the enterprise but the details of its execution is not only an outlet for their existing constructive impulses. It is also a means of creating constructive attitudes in place of the negative attitudes of suspicion, hostility, and fear which often prevail among employee groups in the public service, or in place of that indifference to the public interest which animates a few. This is the challenge which faces government in its personnel policy. Because of the need of legal restrictions and uniformity governmental personnel operations will always tend to emphasize procedures rather than relationships. The recognition of the right and need of employees to participation and consultation in the formation of decisions both as individuals and through their associations will always seem to be a compromise with the proper authority of higher officialdom and of the legislature. Proposals which threaten an immediate increase of public expenditure in the interest of employee welfare will always be the occasion for stimulating the latent fear of "bureaucracy".

For all these reasons the achievement of enlightened personnel policies by governments local or national will never be an easy task. Yet it is a matter of very considerable interest to all of us. If those who understand personnel problems can apply their insight to an analysis of public personnel problems, if they can help the groups traditionally interested in civil service reform to understand the larger objectives of personnel policy, if they can give a measure of public support to legislative and administrative proposals, the way will be much easier. To call attention to this problem is largely the purpose of this paper.

Selected Visual Aids

Tools for Increasing Productivity, Reducing Costs, and Improving Human Relations

By HAROLD R. NISSLEY

Author, "A Check-List of Films" and other articles on Management subjects.

A new survey of films that should encourage the development of "cost reduction consciousness".

EFFECTIVE FILMS on Industrial Engineering subjects have always been important tools to production, engineering and training executives. The demands of industrial mobilization once more place special emphasis on the need to "brush up" established skills and spread new skills at all employee levels. In step with the trend of new discoveries in the field of employee motivation it has been found that good films aid materially in the better understanding of techniques and the reasons for them. This valued by-product of understanding is particularly well developed through films because they can show and explain many concepts that would otherwise take hours or days of verbal exposition to drive home.

The following list represents most of the best that are currently available. More than half of them were made since World War II. Earlier films that are still included earned their place by continuing to be the most effective treatments of the particular subjects that are available. Many excellent films which are not generally available to other companies are not listed.

Most of these films can be borrowed or bought from the listed sources.

All films are 16 mm. black and white, unless otherwise specified. Other designations:

co: color
sf: slide film
si: silent
so: sound

The research behind the selections listed included the recommendations of over 70 educators and leading industrial engineering authorities.

CAUTION: It is best to see each film before it is scheduled for a given audience. Descriptions are necessarily brief. Analyze the nature and background of each audience before previewing films to make sure that material is neither too elementary nor too advanced. Some films are meant for engineers and supervisors only, others are suitable for everybody in the plant.

ABC's of Hand Tools

40 min, so, co. 1948. General Motors Corp., Detroit.

A Walt Disney production featuring Primitive Pete, showing how to work with hand tools: hammer, saw, wrench, etc. Suitable for apprentices, high school shop training, or beginning time study classes.

And in Return

40 min, so. 1948. American Assn. of Consultants, Inc., Pittsburgh.

Shows three different paces (70%, 100%, 130%) for common tasks such as walking, to demonstrate normal effort. Produced to clarify the "normal effort" clause in the union contract of U. S. Steel Corp. subsidiaries.

Better Work Methods

15 min, si. 1942. Univ. of Iowa, Iowa City. Ralph M. Barnes.

Part I: Better method of cutting letters on glasses increased output 140%, required fewer, easier motions of operator. Part II: Recoating Buffing Wheels With Emery shows methods improvement of 350% through process analysis. This film and four other reels in the set were made for use with Prof. Barnes' books on motion and time study.

Dollars and Cents

11 min, so, co. 1949. Marshall Field & Co., Chicago. Allan Mogensen.

Shows right and wrong method of stimulating cost reduction savings; points up supervisor's role in helping workers analyze present methods and proposed changes.

Dusting

20 min, co, so. 1950. American Telephone and Telegraph Co.

Shows easier and better ways of dusting chairs, desks, radiators. Suitable for industrial engineering and maintenance groups.

Easier Way

13 min, so. General Motors Corp., Detroit.

Uses peg board to show how improved methods of work made various jobs more productive and easier to handle. Includes scenes from the home life of a motion study man.

Every Minute Counts

10 min, so. 1945. U. S. Office of Education, Washington.

A supervisor is worried about absenteeism and tardiness in his department. His superintendent points out some causes and the supervisor starts to remedy them.

Fair Day's Pay

20 min, co, so. 1949. Procter & Gamble Co., Cincinnati.

Shows methods of job evaluation company uses to arrive at a fair day's pay.

Fair Day's Work

25 min, co, so. 1949. Procter & Gamble Co., Cincinnati.

Adapted from an article published in FACTORY MANAGEMENT AND MAINTENANCE.

Explains how observed time is adjusted to get leveled or normal time.

Farm Work Simplification
14 min, so. Sinclair Refining Co., Chicago.
Uses time-lapse camera technique and charts to show how farmers can save thousands of steps daily if they will eliminate, combine, simplify their chores. Suitable for industrial engineering and supervisory meetings, particularly in rural areas.

Flow Process Chart
17 min, so, co. 1945. Library of Congress, Washington. Allan Mogensen.
Diagrams a process step by step to show up unnecessary steps and tasks. Useful for introducing the process chart technique for minute job breakdowns.

Improving the Job
9 min, so. 1945. U. S. Office of Education, Washington.
Shows supervisor how to enlist worker's interest by letting him in on the plan from the beginning.

Instructing the Worker on the Job
10 min, so. 1945. U. S. Office of Education, Washington.
A new drillpress operator gets hurried, inadequate instruction, is hurt and quits. The supervisor learns his lesson, instructs the next girl carefully, and she becomes a good operator.

Motion Study Applications
19 min, so. 1940. Univ. of Iowa, Iowa City. Ralph M. Barnes.
Motion study training film that defines and demonstrates common therbligs (hand motions). Old and new ways of folding cartons, assembling ice cube grids, etc. Suitable for foremen and workers; also trainees in motion and time study.

Machine Tools and Motion
20 min, so. General Motors Corp., Detroit.
On-the-job pictures show how worker's strength is taxed by design of typical machines. For tool designers, machine tool foremen, industrial engineers.

Machinery Creates Employment
8 min, so. 1938. Allan Mogensen, Lake Placid, N. Y.
Shows how fabrication of a hub cap by automatic machinery put thousands of people to work, improved American standard of living, when principle was applied to other parts of Ford car. Old but good.

Maiden Form Brassiere
10 min, si. 1940. Allan Mogensen, Lake Placid, N. Y.
Illustrates the flow process chart in an interesting way. Suitable for foremen.

Make Every Minute Count
24 min, si. 1940. Purdue Univ., Lafayette, Ind. Marvin Mundel.
Principles of work simplification shown in before-and-after pictures. Sample operation, with questions for group discussion.

Mighty Labors
34 min, co, so. 1948. Industrial Engineering College, Chicago.
Tells story of improvement in man's standard of living through more efficient use of his tools. Shows stopwatch competently used is one of the most reliable indicators of human efficiency.

More Production Through Motion Study
24 min, si, co. 1940. Purdue Univ., Lafayette, Ind. Marvin Mundel.
Shows old and improved methods on 11 jobs, such as assembling bearing and oil seals, typing letters, inspecting an angle, etc. Suitable for training industrial engineers, supervisors, workers.

Motion Study in Action
15 min, so. 1942. Univ. of Iowa, Iowa City. Ralph M. Barnes.
Tells how nine different plant operations were improved, with output increases up to 225%.

Motion Study Principles
18 min, so. 1940. Univ. of Iowa, Iowa City. Ralph M. Barnes.
Principles of motion study illustrated by bolt and washer assembly, refrigerator door knob assembly, and folding packing papers.

Motion Study Applied to Letter Indexing
11 min, 35 mm, sf. Tennessee Valley Authority.
Illustrates indexing operation in TVA central files. Of interest to clerical workers.

Motion Study Is Everybody's Job
26 min, si, co. Purdue Univ., Lafayette, Ind. Marvin Mundel.
Before-and-after methods on 11 jobs, showing changes in hand and body motions, changes in raw materials. Arranged to demonstrate Dr. Mundel's five classes of change.

Rolling and Packing Surgical Tape
4 min, si. 1940. Johnson & Johnson, New Brunswick, N. J., and Allan Mogensen.
Old and new methods of rolling and packing surgical tape, bolt and washer assembly.

Stockroom Sam
10 min, co, so. 1950. Marshall Field & Co., Chicago.
Sam discovers how to save himself steps and make his job easier with the help of a flow process chart — and his supervisor.

Western Electric-Iowa Skill Study
25 min, si. 1940. Univ. of Iowa, Iowa City. Ralph M. Barnes.
Shows over period of a year how green worker improves with practice, more than doubles output.

Work Measurement Films
Si. Ralph M. Barnes. For loan or sale by W. C. Brown Co., 915 Main St., Dubuque, Iowa.
Unit I: 5 reels showing person walking, dealing cards, performing various factory operations. Unit II: 6 reels showing workers performing miscellaneous operations at various speeds.

Work Simplification Adapted to Clerical Operations
19 min, so. 1945. Standard Register Co., Dayton, Ohio.
Shows conventional and improved methods for filing, alphabetizing strips, estimating, collating papers, etc. For industrial engineering groups, office managers.

Work Simplification in Action
10 min, so. 1950. Wolverine Tube Div. of Calumet and Heda Consolidated Copper Co., Detroit 9, Mich.
Shows follow-up on work simplification program after initial conference. Typical group of foremen analyze sawing operation, increase production threefold.

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☐ **3. SMALL PLANT MANAGEMENT.** Guide to practical "know-how" management, based on systematic study of small plant activities in different industries by the Small Plant Committee of the ASME. *Edited by Dr. Edward H. Hempel.* 449 *pages,* 45 *illus.,* $6.00

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☐ **5. THE ENGINEERING OF ORGANIZATION AND MANAGEMENT.** Methods for operating any enterprise—from the small business to the large corporation. *By Robert T. Livingston.* 247 *pages,* 27 *illus.,* $3.50

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☐ **7. LABOR RELATIONS AND HUMAN RELATIONS.** Highlights typical human-relations problems; shows how wholehearted cooperation can be achieved. *By Benjamin M. Selekman.* 255 *pages,* $3.25

☐ **8. THE MANAGEMENT OF PERSONNEL AND LABOR RELATIONS.** Surveys the multiple facets of personnel management, including principal problems and techniques of solution. *By G. Watkins, P. Dodd, W. McNaughton, and P. Prasow. 2nd Edition.* 974 *pages,* 105 *illus.,* $5.75

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The Management Bookshelf

Management in Motion by NEIL W. CHAMBERLAIN, YALE UNIVERSITY PRESS, New Haven, 1950. 124 pages. $2.00.

THIS BOOK REPORTS one of the studies of the Labor and Management Center of Yale University. The insightful work of Bakke and his associates has been known to a growing audience for almost two decades, and the presence of a book among their studies would alone give it a degree of attention not usually won by new research. But this study has an additional merit. It centers on the problem of how decisions are made in a large service organization. That problem is important not only to management and labor personnel who want to know how effective decision-making takes place, but to the economist and sociologist who are trying to explain and predict trends in the decisions that are the growing edge of a changing industrial society. Since this is the study of a single kind of decision—how to organize the internal transfer of an industry's personnel, and the study of that problem in one particular industry — Southern New England Telephone Company, and the study of the way that industry handled the problem over one time period—from about 1925 to the present, the usefulness of the findings will be limited by the similarity of the reader's problems. The book may be examined, then, for the contribution it makes to three audiences: decision-makers in large, complex organizations, persons especially concerned with the problem of the internal movement of personnel in large organizations, and some social scientists.

It is likely that decision-makers and people especially concerned with problems of employee transfer will find this study more fruitful than will social scientists. The body of the research gives a thorough and honest picture of the distribution of power, the channels of communication, the occupational blindness and the trained sensitivities of the decision-makers, and the results that each of these conditions had on the final decision that emerged and on the administration of that decision. The frequent criticism that a study oversimplifies, or that it presents too neat an interpretation, will not apply here. These audiences should find many insights into the dynamics and results of their own functioning from the reading of this report. They may also find some possibilities for resolving their problems. The author has been good enough to provide a summary of the "lessons-to-be-learned" in a final chapter on effective decision-making. These principles should have wide applicability.

The social scientist will find little that is new and less that is theoretically generalizable from this report. The author's closest approach to a theoretical framework appears when he discusses his observations in terms of the existence and functioning of centers of power and channels of communication among the intra-company groups involved. For the most part, however, the study is treated as a case history to be savored or rejected for its own individual merits. If the study of group decision-making were in its beginning stages this might be a necessary attack. But there are a host of hypotheses and there is a sizable amount of data on hand, and it is inexcusable that none of this is used either to provide perspective for the work done here, or, and more importantly, to provide guide-lines and priorities for the present study.

All of the book's audiences may share in wishing that this study contributed something in the way of a method for convincing colleagues of the need for improving their methods of making decisions. It is unfair to criticize an investigator for not doing something he had no intention of doing in his research, but it is quite clear that the applied usefulness of the insights of a study such as this must wait upon a method for making the finding a part of the working knowledge of practitioners. There is every evidence that the mere reading of a research report will not do that job. That the author has not included such information may be an oversight. It may be a function of taking what is primarily an inter-

pretive rather than a manipulative approach to his problem. Whatever the reasons for this omission, his study will remain a descriptive case history until the means are found for putting his findings to work.

G. E. SWANSON
Department of Sociology
University of Michigan

Public Administration in a Democratic Policy by W. BROOKS GRAVES, D. C. Heath & Co., Boston, 1950.

THIS IS A RATHER orthodox summary of the field of public administration as it has come to be defined in the last twenty-five years. Intended primarily as a college textbook it is copiously footnoted and contains an almost startling number of quotations from writings in the field. To the writer's credit the book also contains consideration of a number of administrative problems not usually found in beginning texts —licensing is a good example. The book also has an abundance of very graphic charts as teaching aids.

But it is a disappointing book. Its failure is a failure which is common in public administration. It does not come to grips with the very formidable theoretical questions which must be considered if public administration is to become a scientific discipline.

Key terms are assumed to be understood rather than defined. Thus nowhere in the book do we find clear-cut definitions of such fundamental, but slippery, concepts as "authority", "responsibility", "administration", "hierarchy" and the like. Failure to define such terms operationally means that traditional-legal assumptions are uncritically accepted. It also means that students are tutored in the jargon of public administration rather than given a real understanding of behavior of people in large scale organization.

Furthermore, its approach is legal rather than sociological. We can take the concept of authority as an example. The authoritative relationship is viewed as a bundle of legal rights and duties which stem originally from the constitution and statutes and then, by successive delegation become narrowed until one finds those at the bottom of the pyramid who "are the great mass of private soldiers whose duty is to obey . . ." (p. 37). Such an approach, it seems to this reviewer, ignores the extremely pertinent question as to the situations in which those persons do or do not obey, regardless of their legal duty to do so.

Although Dr. Graves makes an attempt to incorporate the findings of the newer writers in administration, such as those in the Hawthorne Group, his pre-occupation with the formal-legal framework is such as to make this a peripheral area of attention. One comes away from the book with the rather uncomfortable feeling that, once he has become a member of a public organization, the individual checks his personality at the door and thereafter becomes a more or less rationalistic servant of the sovereign.

Furthermore, the approach is prescriptive, devoting most of its attention to the *best* way to structure public organizations. I believe, that, before public administration can make progress in prescribing how people *ought* to behave organizationally, it must learn a good deal more about how people *do* behave organizationally.

DONALD W. SMITHBURG
Department of Political and Social Science
Illinois Institute of Technology

From the Wagner Act to Taft-Hartley, HARRY A. MILLIS and EMILY CLARK BROWN, University of Chicago Press, 1950.

PROFESSORS MILLIS AND BROWN have provided us with a treatise on the government's role in collective bargaining designed for the advanced, sophisticated scholar. Strictly speaking, the authors do not deal with all the historical or current aspects of the government's role in collective bargaining, but limit themselves instead to an analysis of the National Labor Relations Act (Wagner Act) and the Taft-Hartley Act. But the impact of these two laws on the pattern of collective bargaining in America has been so profound, that an analysis of these two statutes will provide the reader with more than a bird's eye view of the relevant role of government.

No serious student of collective bargaining, regardless of his ideological leanings, can deny that this is a monumental volume. For the first time all the practices and policies of the government under both the laws in question have been gathered together between two covers in a logical, concise form. Nor can it be charged that in presenting this information the authors

(*Continued on page* 27)

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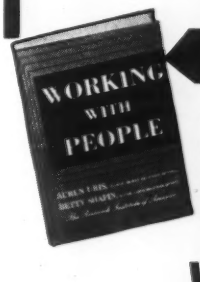

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SOCIETY NEWS

THE ANNUAL SPRING MANAGEMENT CONFERENCE jointly sponsored by the Chicago Chapter and the Northwestern University School of Commerce is scheduled for February 1 and 2, 1951 on the Chicago Campus of Northwestern University. The program includes authoritative speakers on personnel, industrial relations, and industrial engineering aspects of the solution to the manpower shortage through increased productivity. Panels of outstanding authority will discuss these subjects and there will be small group discussions for those who attend. Registration is $10.00 to SAM members, $15.00 to non-members. Further details are available from the Conference, c/o Northwestern University, School of Commerce, Chicago Campus, Chicago, Illinois.

CINCINNATI CHAPTER is conducting a *Methods Time Measurement Clinic* January 18-19, 1951. Serge A. Birn, Consulting Management Engineer, Louisville, Kentucky is in charge of the program which includes Clifton Ellis and James R, Kershner of Mr. Birn's staff and Harry Strandberg, Chief Industrial Engineer, Robertshaw-Fulton Company.

PHILADELPHIA CHAPTER has scheduled their Third Annual Conference for February 9, 1951 at the Broadwood Hotel. Theme of the Conference is, *"Four Letter Management On All Fronts."*

GEORGE J. PARKER has joined ATF Incorporated as vice president in charge of defense production. His duties will include direction of all manufacturing activities on contracts related to the national defense program. He will be responsible for coordinating such activities among ATF's affiliated companies and will serve as a member on the board of directors of each company. For the last four years he has been general manager of the Dana Corporation; prior to that he was chief industrial engineer of the Sperry Gyroscope Company and assistant manager of its Nassau plant.

HY FISH, of the Chicago Chapter, recently returned from a four month visit, on a U. S. State Dept. mission, to the government of Israel. He served as consultant to the government on production problems and conducted two training programs in methods improvements.

"KNOW-WHAT" is the theme for the New York Chapter's January Dinner Meeting scheduled for January 18. 1951 at the Brass Rail. General Chairman H. R. Blank, Editor of *Modern Industry*, has arranged a panel session to provide the policy framework for business decisions in the difficult days ahead of us. Panel speakers will be Erwin H. Schell, Director, Dept. of Business & Engineering Administration, M. I. T., and Edwin B. George, Economist, Dun & Bradstreet. Leading the discussion will be John T. Connor, Secretary & Counsel, Merck & Co., and William E. Hill, Turck, Hill & Company.

COLUMBIA UNIVERSITY will hold a *"Conference on Industrial Personnel"* from March 19-23, 1951. Under the theme of "The Frontiers of Personnel Administration", certain new concepts of personnel administration will be presented in lectures and round-table clinic discussions between authorities on various phases of personnel administration and representatives of approximately fifty leading industrial and business concerns.

THE RESEARCH and Service Center of Western Reserve University (Cleveland, Ohio) announces the following conferences under the direction of Dr. Jay L. Otis: February 1951—*"Job Evaluation for Clerical, Supervisory, and Administrative Jobs."* March 1951 — *"Employee Evaluation."*

AMERICAN UNIVERSITY (Washington, D. C.) has established a Master of Business Administration degree. New courses in Business and Industrial Management are being developed as part of the new Graduate Program.

BOOZ, ALLEN & HAMILTON announce that Lloyd E. Wilkinson and Lawrence L. Ellis have been admitted to partnership.

Mr. Wilkinson was formerly with the Kellogg Company and the Market Research Corporation of America.

Mr. Ellis had been controller of a division of the National Supply Company and before that was employed by General Electric.

Both men will continue to be based in the consulting firm's home office in Chicago.

THE INDIANAPOLIS CHAPTER held their Annual Fall Conference on November 18, 1950 at the Severin Hotel in Indianapolis. Among the outstanding speakers were: Charles Winkelman, Supervisor of Industrial Engineering, Belden Manufacturing Company; Marvin E. Mundel, Professor and Chairman of Industrial Engineering, Purdue University; Karl Rahdert, Faculty, School of Business, Indiana University; E. C. Ostlund, Chief Industrial Engineer, American Steel and Wire Company; Paul Cain, Chief Industrial Engineer, Armco Steel Corporation; Walter C. Gummere, Chief Industrial Engineer, Colgate-Palmolive-Peet Company.

Chapter president Milo M. Haffner and Conference Chairman Eugene Ruark report capacity attendance.

RAYMOND M. HANNA, general manager of the production engineering departments of John Morrell & Co. since 1946, has resigned that post to go into business for himself as a management consultant in Omaha.

Mr. Hanna, a member of S.A.M.'s Chicago chapter, will specialize in production and management problems. In his new work he will be primarily concerned in the development and administration of management control procedures.

NATIONAL FOREMEN'S INSTITUTE announces the establishment of an expanded supervisory training department and the appointment of Gustav R. Stahl to head it.

THE RECORDS MANAGEMENT Association of New York announces a new evening training course in basic filing and record keeping. Subjects include microfilming and systems work. Details are available from the Association at 299 Madison Avenue, NYC. Course starts February 6, 1951.

THE PHILADELPHIA CHAPTER of S.A.M. recently visited the Philadelphia Division of the Yale & Towne Manufacturing Company. Host for Yale & Towne was James B. Marron, Director of Industrial Relations, and a member of the Chapter.

In addition to touring the new Yale plant and inspecting latest developments in material handling equipment, the group heard Mr. John McCarley, Production Manager explain the layout and functioning of the manufacturing sections. Mr. Charles Cousins, of Yale & Towne discussed the handling and processing of orders at this plant.

Following the tour, the Chapter members heard Mr. Bruno Moski, Chief Industrial Manager discuss Yale's new time and motion study techniques and wage incentive plan.

Management Bookshelf

(*Continued from page* 25)

have biased their purely descriptive findings, even though they are both unsympathetic to the Taft-Hartley Act and very much impressed with the accomplishments of the Wagner Act. (The senior author was himself a member of the NLRB during his lifetime.) For the authors have very wisely separated the descriptive and analytic parts of their work. In summarizing the national experience under both the Wagner and Taft-Hartley Acts, Professors Millis and Brown have contented themselves with merely presenting the relevant practices and have been very careful to omit nothing important. They examined this experience with a fine tooth comb to make certain that everything relevant was brought into play, and then merely condensed their findings of fact so as to give them a more readable form. As a consequence, students and laymen of all shades of ideological leanings will find in this volume a wealth of objective, accurate information which would otherwise take them days and weeks to gather.

Having presented the purely factual information on each relevant topic, the authors proceed to analyze and evaluate these findings of fact. It is in these sections that many a reader will disagree with Professors Millis and Brown. On the other hand, many competent observers will find these conclusions both accurate and constructive.

The dominant theme that emerges from both of these volumes is that the role of government in both social security and collective bargaining has grown greatly in the last two decades. And this reviewer would add: that role has grown just as rapidly in other areas of the labor market. What, then, explains this trend? Perhaps the clue to an accurate answer lies in the fact that the American society is a free society. For once this is recognized, it follows that governmental policy in labor (or any other field, for that matter) reflects the climate of opinion, even though it does so somewhat imperfectly. The real disagreement among observers can logically relate only to the question of what induces changes in this climate of opinion. But once it is recognized that in a democratic society governmental policy reflects the mental climate (for better or for worse), then one is compelled to conclude that this growing role of government intervention in the labor market has been sought and accepted by the majority of our citizens. And — to paraphrase one authority in this field—this majority has liked what it has tasted and is asking for more. But it may well be queried: Is this a "good" trend? And the answer must perforce take the form of another question: Good *for whom?* When the role of government is cast in such a pragmatic mold, we become vividly aware of its evolutionary pattern and of the *relatively* meaningless value of absolutist concepts. To put it briefly: In a free society such as ours we must be prepared for constant change and constant compromise.

JOSEPH SHISTER, *Chairman*
Industrial Relations Department
The University of Buffalo

A Framework for Long-Range Agricultural Policy by OSCAR HELINE AND DONALD R. KALDOR, An Agriculture Committee Report Planning Pamphlets No. 72, National Planning Association, Washington, D. C., July 1950. 68 pp. 50c.

THIS IS AN EXCEPTIONALLY well written, easy to read booklet. It is not difficult to understand what the authors are trying to say. However, engineers and management men who are accustomed to thinking of "framework" as foundations, roof trusses and other structural members will be disappointed in the title.

The booklet is really an exceptional discussion of some of the factors, difficulties and suggestions for solution of agricultural problems. The treatment is quite frank as indicated by this statement, "Sometimes agriculture, as well as other groups, has been guilty of pressing for measures that increase the income of farmers regardless of how they burden other people." Following this general confession, the authors try to discuss the issues from the viewpoint of the greatest good to the country as a whole.

A large part of the text is taken up in discussing the economic role of government, especially the agricultural phases. The general impression is left that some form of governmental balancing of farm income is necessary to stable agricultural economy. It seems a bit unfortunate that so many of the suggestions depend on economic theories and two-valued logic rather than a more dynamic analysis of scientifically established basic data.

(*Continued on page* 28)

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